

# Fosnot Mini Lesson

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## **Becoming the Math Teacher You Wish You'd Had** - Tracy Zager 2017

Readers, be warned: you are about to fall in love. Tracy writes, "Good math teaching begins with us." With those six words, she invites you on a journey through this most magnificent book of stories and portraits...This book turns on its head the common misconception of mathematics as a black-and-white discipline and of being good at math as entailing ease, speed, and correctness. You will find it full

of color, possibility, puzzles, and delight...Let yourself be drawn in. Elham Kazemi, professor, math education, University of Washington While mathematicians describe mathematics as playful, beautiful, creative, and captivating, many students describe math class as boring, stressful, useless, and humiliating. In *Becoming the Math Teacher You Wish You'd Had*, Tracy Zager helps teachers close this gap by making math class more like mathematics. Tracy spent

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years with highly skilled math teachers in a diverse range of settings and grades. You'll find this book jam-packed with new thinking from these vibrant classrooms. You'll grapple with big ideas: How is taking risks inherent to mathematics? How do mathematicians balance intuition and proof? How can teachers value both productive mistakes and precision? You'll also find dozens of practical teaching techniques you can try in your classroom right away--strategies to stimulate students to connect ideas; rich tasks that encourage students to wonder, generalize, conjecture, and persevere; routines to teach students how to collaborate. All teachers can move toward increasingly authentic, delightful, robust mathematics teaching and learning for themselves and their students. This important book helps us develop instructional techniques that will make the math classes we teach so much better than the math classes we took.

Contexts for Learning Mathematics, Level 1 -

Catherine Twomey Fosnot  
2006-03-15

Contexts for Learning consists of: Investigations and Resource Guides - workshop structure involves students in inquiring, investigating, discussing, and constructing mathematical solutions and strategies - investigations encourage emergent learning and highlight the developmental landmarks in mathematical thinking - strings of related problems develop students' deep number sense and expand their strategies for mental arithmetic Read-Aloud Books and Posters - create rich, imaginable contexts--realistic and fictional--for mathematics investigations - are carefully crafted to support the development of the big ideas, strategies, and models - encourage children to explore and generate patterns, generalize, and develop the ability to mathematize their worlds Resources for Contexts for Learning CD-ROM - author videos describe the series' philosophy and organization - video overviews show

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classroom footage of a math workshop, including minilessons, investigations, and a math congress - print resources include research base, posters, and templates

**Building Powerful Numeracy for Middle and High School Students -**

Pamela Weber Harris 2011  
As secondary math teachers, we're often frustrated by the lack of true number sense in our students. Solid research at the elementary level shows how to help all students become mathematically proficient by redefining what it means to compute with number sense. Pam Harris has spent the past ten years scrutinizing the research and using the resulting reform materials with teachers and students, seeing what works and what doesn't work, always with an eye to success in higher math. This book brings these insights to the secondary world, with an emphasis on one powerful goal: building numeracy.--Page [4] of cover

**Minilessons for Early Multiplication and Division -**

Willem Uttenbogaard 2008-03  
A resource of 75 minilessons designed to be used at the start of a math workshop and to last for ten to fifteen minutes.

Investigate Fractions -  
Catherine Twomey Fosnot  
2010-10

"The rich, open investigations we've developed allow children to engage in mathematizing in a variety of ways. We honor children's initial attempts at structuring and modeling their world mathematically, while at the same time supporting and challenging them to ensure that important big ideas and strategies are being developed progressively." Catherine Twomey Fosnot  
Learn how to establish a vibrant, collaborative math workshop for students in grades 4 through 6 and how Catherine Fosnot and her colleagues introduce fractions and compare fractional amounts. Through 2 foundational books- Investigating Fractions, Decimals, and Percents: Overview and Field Trips and Fund-Raisers: Introducing Fractions-and eight online

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video clips, Cathy and her colleagues provide the strategies, lesson plans, and tools you'll need to transform your classroom into a community of young mathematicians. In the Overview book Cathy provides the professional understandings needed to establish a vibrant math workshop. After chronicling the motivations and ideals that inspire her work, Cathy describes how to help students construct the big ideas, strategies, and models that shape the landscape of learning. Ensuing sections describe the architecture of an investigation and explain how the predictability of this framework fosters independence and collaboration. In addition to describing the management systems that make these investigations rigorous and responsive, Cathy suggests ways to sequence instruction and highlight how units can be used to enhance your existing curriculum. Like the other units in the Contexts for

Learning Mathematics series, Field Trips and Fund-Raisers: Introducing Fractions provides a two-week sequence of investigations, minilessons, games, and other contexts for learning. The fair-sharing of submarine sandwiches on a school field trip provides the context for exploring big ideas related to fractions in this unit. In attempting to settle arguments about the fair distribution of sandwiches, students explore the connection between division and fractions as well as ways to compare fractional amounts. As the unit progresses, students use the double number line as a model and explore equivalent fractions. The nine accompanying video clips include live from-the-classroom video footage of the unit in action and narrated slide shows that describe the ideals that shape the math workshop and the thinking behind the Contexts for Learning Mathematics series. (Video clips are free for 6 months upon registration. You must register within 6 months of

purchase.) Learn more about these resources and the series at [www.contextsforlearning.com](http://www.contextsforlearning.com). This pack is part of firsthand's Getting Started series. Bridging the gap between educational theory and practice, firsthand classroom materials model the carefully crafted techniques and language of master teachers in ways that help teachers refine their practice and reinvent their own teaching. The most comprehensive of these resources span more than a year of instruction. Firsthand's Getting Started Packs were created for teachers in training and professional book study groups who want a compact, affordable way to study and tryout these transformative classroom materials. Each Getting Started Pack includes an overview book, a complete unit of study, online video clips provided free of charge for 6 months, and an accompanying study guide. Getting Started packs include: Launch a Primary Writing Workshop, Grades K-2; Launch an

Intermediate Writing Workshop, Grades 3-5; Launch an Intermediate Reading Workshop, Grades 3-5; Introduce the Qualities of Writing, Grades 3-6; Monitor Comprehension with Primary Students, Grades K-2; Monitor Comprehension with Intermediate Students, Grades 3-6; Investigate the Number System, Grades K-3; Investigate Multiplication, Grades 3-5; Investigate Fractions, Grades 4-6.

**Active Education for Future Doctors** - Nomy Dickman  
2020-05-11

This book is designed to aid the faculty of medical and other health related schools in developing the pedagogical skills to transform their teaching in multiple settings including the classroom, the conference room, the ambulatory office, and the hospital from a passive learning experience to an active learning experience. In this transformation, the teacher morphs from the 'all knowing expert' to the 'learning facilitator and coach'.

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After a brief review of adult learning theory the remainder of the book will focus on a broad variety of teaching techniques and classroom activities that 'flip' the classroom from a passive to an active learning environment. In addition to condensed explanations of each of the techniques, examples of each process will be presented with suggestions for flexing the techniques to better accommodate a variety of learning settings and a diversity of learners.

*Minilessons for Extending Addition and Subtraction -*

Willem Uttenbogaard 2008-03

A resource of 68 minilessons designed to be used at the start of a math workshop and to last for ten to fifteen minutes.

**Elementary and Middle School Mathematics:**

**Pearson New International Edition** - John A. Van de Walle 2013-07-29

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.

**Young Mathematicians at**

**Work** - Catherine Twomey Fosnot 2001

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

**Knowledge and Critical Pedagogy** - Joe L. Kincheloe 2008-06-19

In a globalized neo-colonial

world an insidious and often debilitating crisis of knowledge not only continues to undermine the quality of research produced by scholars but to also perpetuate a neo-colonial and oppressive socio-cultural, political economic, and educational system. The lack of attention such issues receive in pedagogical institutions around the world undermines the value of education and its role as a force of social justice. In this context these knowledge issues become a central concern of critical pedagogy. As a mode of education that is dedicated to a rigorous form of knowledge work, teachers and students as knowledge producers, anti-oppressive educational and social practices, and diverse perspectives from multiple social locations, critical pedagogy views dominant knowledge policies as a direct assault on its goals. Knowledge and Critical Pedagogy: An Introduction takes scholars through a critical review of the issues facing researchers and educators in the last years of

the first decade of the twenty-first century. Refusing to assume the reader's familiarity with such issues but concurrently rebuffing the tendency to dumb down such complex issues, the book serves as an excellent introduction to one of the most important and complicated issues of our time.

**Transforming Mathematics Instruction** - Yeping Li

2014-07-05

This book surveys and examines different approaches and practices that contribute to the changes in mathematics instruction, including (1) innovative approaches that bring direct changes in classroom instructional practices, (2) curriculum reforms that introduce changes in content and requirements in classroom instruction, and (3) approaches in mathematics teacher education that aim to improve teachers' expertise and practices. It also surveys relevant theory and methodology development in studying and assessing mathematics instruction.

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Classroom instruction is commonly seen as one of the key factors contributing to students' learning of mathematics, but much remains to be understood about teachers' instructional practices that lead to the development and enactment of effective classroom instruction, and approaches and practices developed and used to transform classroom instruction in different education systems.

Transforming Mathematics Instruction is organized to help readers learn not only from reading individual chapters, but also from reading across chapters and sections to explore broader themes, including: - Identifying what is important in mathematics for teaching and learning emphasized in different approaches; - Exploring how students' learning is considered and facilitated through different approaches and practices; - Understanding the nature of various approaches that are valued in different systems and cultural

contexts; - Probing culturally valued approaches in identifying and evaluating effective instructional practices. The book brings new research and insights into multiple approaches and practices for transforming mathematics instruction to the international community of mathematics education, with 25 chapters and four section prefaces contributed by 56 scholars from 10 different education systems. This rich collection is indispensable reading for mathematics educators, researchers, teacher educators, curriculum developers, and graduate students interested in learning about different instructional practices, approaches for instructional transformation, and research in different education systems. It will help readers to reflect on approaches and practices that are useful for instructional changes in their own education systems, and also inspire them to identify and further explore new areas of research and program development in

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improving mathematics teaching and learning.

**Teaching with Mathematical Argument** - Despina A.

Stylianou 2018

Argumentation leads to deeper understanding Many students' interest in mathematics fades as they are asked to solve seemingly endless disconnected problems.

Despina Stylianou and Maria Blanton show how building daily instruction around mathematical argumentation can enliven your classroom and re-engage your students.

Teaching with Mathematical Argument explores how argumentation-discussing and debating a rich mathematical problem-provides all students a deeper understanding of mathematics. You'll find guidance for: understanding what argumentation is and building a classroom culture that supports it engaging every student in argumentation, not just "strong" or "high performing" students assessing your students' arguments and designing instruction responsive to their learning.

The potential to transform student engagement At its core, argumentation helps students delve deeply into foundational mathematical concepts, enhancing their understanding and confidence along the way. Research shows that this type of instruction has the potential to transform student engagement and success in mathematics, and so Despina and Maria argue that mathematical arguments should have a far more central role in teaching and learning than most of us have ever considered. With ideas for structuring discussions and suggested tasks to try, this book will show you how to elevate argumentation in your instruction and harness its power for enhancing student learning.

**Young Mathematicians at Work** - Catherine Twomey

Fosnot 2002

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

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International Reflections on the Netherlands Didactics of Mathematics - Marja van den Heuvel-Panhuizen 2019-08-13

This open access book, inspired by the ICME 13 Thematic Afternoon on "European Didactic Traditions", takes readers on a journey with mathematics education researchers, developers and educators in eighteen countries, who reflect on their experiences with Realistic Mathematics Education (RME), the domain-specific instruction theory for mathematics education developed in the Netherlands since the late 1960s. Authors from outside the Netherlands discuss what aspects of RME appeal to them, their criticisms of RME and their past and current RME-based projects. It is clear that a particular approach to mathematics education cannot simply be transplanted to another country. As such, in eighteen chapters the authors describe how they have adapted RME to their individual circumstances and view on mathematics

education, and tell their personal stories about how RME has influenced their thinking on mathematics education.

**Minilessons for Operations with Fractions, Decimals, and Percents** - Kara Imm

2008-02-29

A resource of 75 minilessons designed to be used at the start of a math workshop and to last for ten to fifteen minutes.

**Minilessons for Extending Multiplication and Division** -

Willem Uttenbogaard 2008-03

Minilessons for Extending Multiplication and Division is one of two yearlong resource guides in Contexts for Learning Mathematics' Investigating Multiplication and Division (3 - 5) Minilessons for Extending Multiplication and Division can be helpful in grades 4 - 5 as students work with multiplication and division beyond the basic facts. This guide contains 77 minilessons structured as strings of related computation problems. They are likely to generate discussion of certain strategies or big ideas that are landmarks

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on the landscape of learning for multiplication and division, particularly using numbers with two and three digits. Although the emphasis is on the development of mental arithmetic strategies, this does not mean learners have to solve the problems in their heads - but it is important for them to do the problems with their heads. In other words, as you use this guide, encourage students to examine the numbers in each problem and think about clever, efficient ways to solve it. The relationships between the problems in the minilesson will support students as they progress through the string. The open array is used throughout to represent student strategies. To learn more visit <http://www.contextsforlearning.com>

[//www.contextsforlearning.com](http://www.contextsforlearning.com)

**Distance Education for Teacher Training** - Hilary Perraton 2002-03-11

First published in 2002.

Routledge is an imprint of Taylor & Francis, an information company.

Learner-Centered Theory and

Practice in Distance Education

- Thomas M. Duffy 2003-12-08  
Learner-Centered Theory and Practice in Distance Education: Cases From Higher Education brings the voice of the learning sciences to the study and design of distance learning.

The contributors examine critical issues in the design of theoretically and pedagogically based distance education programs. Eight distance education programs are described in enough detail to allow readers with different interests to understand the pedagogical approaches and the implications of implementing those approaches. Issues of theory, pedagogy, design, assessment, communities of practice, collaboration, and faculty development are discussed.

Each section of the book includes: \*a primary chapter written by an author or authors involved with a distance education program that reflects learner-centered principles; \*a formal reaction to the chapter by a specialist from the learning sciences,

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educational evaluation and policy, administration, or the corporate sector with expertise in issues of distance learning; and \*an edited transcript of the authors' discussion of the primary chapter held at a symposium at the Asilomar Conference Center. A final "summing up" section offers two perspectives--from leading scholars outside the fields of instructional design, evaluation, and the learning sciences--on the approaches and thinking reflected in the rest of the book. This book is essential for researchers, as well as all those engaged in delivering, supporting, or administrating distance education programs at the post-secondary level. The descriptions, strategies, and principles will inform the design of continuing education, as well as degree-based education and corporate education and training, and distance education programs for adults.

Constructivism - Catherine Twomey Fosnot 2013-09-18  
This enduring bestseller

remains the most comprehensive examination of constructivism and its relationship to teaching and learning. Closing the gap between theory and practice, well-known scholars make constructivism accessible by showing its application in everyday classrooms. Building on the success of the first edition, the authors have completely updated this popular text and expanded its scope to include examples of constructivist teaching across all grade levels and disciplines. An ambitious revision of a now classic text, *Constructivism: Theory, Perspectives, and Practice, Second Edition* is an invaluable resource for practicing teachers, teacher educators, and curriculum specialists in mathematics, science, social studies, and language arts. New for the Second Edition! An updated theory section that adds further contemporary biological evidence to go beyond the theories of Piaget and Vygotsky—offering a more contemporary framework for a

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psychological theory of learning. New chapters reflecting the school-based reforms that have been initiated since the writing of the first edition—specifically addressing the changes in mathematics, social studies, and teacher education. A new chapter on the emerging field of disability studies—including a critique that unmask current practices and assumptions that better serve schools rather than students and their families. Contributors: Paul Cobb • Susan Cowey • Rheta DeVries • Eleanor Duckworth • Dewey I. Dykstra, Jr. • George Forman • Catherine Twomey Fosnot • Catherine A. Franklin • June S. Gould • Maxine Greene • Candace Julyan • Randall Stewart Perry • D. Kim Reid • Deborah Schifter • Jan Weatherly Valle • Ernst von Glasersfeld • Betty Zan. Praise for the First Edition! “Provides the reader with many ways of connecting to the central ideas of constructivism . . . highly readable.” —Gifted Child Quarterly “Shows how constructivist theory can

inform classroom practices, and . . . provides teachers with a deeper understanding that gives substance to the rhetoric of school reform.” —Journal of Curriculum Studies

### **Student-Centered Teaching in Paleontology and Geoscience Classrooms**

Robyn Mieko Dahl 2018-11-29  
Research on learning and cognition in geoscience education research and other discipline-based education communities suggests that effective instruction should include three key components: a) activation of students' prior knowledge on the subject, b) an active learning pedagogy that allows students to address any existing misconceptions and then build a new understanding of the concept, and c) metacognitive reflections that require students to evaluate their own learning processes during the lesson. This Element provides an overview of the research on student-centered pedagogy in introductory geoscience and paleontology courses and gives examples of these instructional

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approaches. Student-centered learning shifts the power and attention in a classroom from the instructor to the students. In a student-centered classroom, students are in control of their learning experience and the instructor functions primarily as a guide. Student-centered classrooms trade traditional lecture for conceptually-oriented tasks, collaborative learning activities, new technology, inquiry-based learning, and metacognitive reflection.

**Contradictions of School Reform** - Linda McNeil

2002-09-11

First published in 2000.

Routledge is an imprint of Taylor & Francis, an informa company.

Guided Math: A Framework for Mathematics Instruction

Second Edition - Laney

Sammons 2019-03-22

This instructional math framework provides an environment for mathematics that fosters mathematical thinking and understanding while meeting the needs of all students. This updated math

resource takes an innovative approach to mathematics instruction and uses the same teaching philosophies for guided reading. Educators will learn how to effectively utilize small-group and whole-group instruction, manipulatives, math warm-ups, and Math Workshop to engage K-12 students in connecting mathematics to their own lives. Maximize the impact of your instruction with ideas for using ongoing assessment and differentiation strategies. This 2nd edition guided math resource written by Laney Sammons provides practical guidance and sample lessons for grade level bands K-2, 3-5, 6-8, and 9-12. Promote a classroom environment of numeracy and mathematical discourse with this essential professional resource for K-12 math teachers!

**Mathematics Education in the Digital Age** - Alison Clark-Wilson

2021-05-25

The wide availability of digital educational resources for mathematics teaching and learning is indisputable, with

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some notable genres of technologies having evolved, such as graphing calculators, dynamic graphing, dynamic geometry and data visualization tools. But what does this mean for teachers of mathematics, and how do their roles evolve within this digital landscape? This essential book offers an international perspective to help bridge theory and practice, including coverage of networking theories, curriculum design, task implementation, online resources and assessment. *Mathematics Education in the Digital Age* details the impacts this digital age has, and will continue to have, on the parallel aspects of learning and teaching mathematics within formal education systems and settings. Written by a group of international authors, the chapters address the following themes: Mathematics teacher education and professional development Mathematics curriculum development and task design The assessment of mathematics Theoretical perspectives and

methodologies/approaches for researching mathematics education in the digital age This book highlights not only the complex nature of the field, but also the advancements in theoretical and practical knowledge that is enabling the mathematics education community to continue to learn in this increasingly digital age. It is an essential read for all mathematics teacher educators and master teachers.

*Field Trips and Fund-Raisers* - Catherine Twomey Fosnot 2008-03

"Contexts for Learning Mathematics" series is designed to support a conceptual understanding of essential mathematical ideas, strategies and models. Each unit provides a two-week sequence of investigation, minilessons, games, and other contexts for learning. The series' 18 classroom-tested units are organized into grade-appropriate levels.

*Fostering Children's Mathematical Development, Grades 3-5* - Catherine Twomey Fosnot 2005-07-26

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Designed for the workshop participant or preservice teacher, this CD-ROM enables you to watch and interact with video that depicts classroom teachers as they listen to, question, and interpret students' thinking.

**Artful Teaching** - David M. Donahue 2010-06-21

The authors share arts-integrating practices across the K-8 curriculum and describe how the arts offer an entry point for gaining insight into why and how students learn.

*Investigate Multiplication* - Catherine Twomey Fosnot 2010-10

"The rich, open investigations we've developed allow children to engage in mathematizing in a variety of ways. We honor children's initial attempts at structuring and modeling their world mathematically, while at the same time supporting and challenging them to ensure that important big ideas and strategies are being developed progressively." Catherine Twomey Fosnot Learn how to establish a vibrant,

collaborative math workshop for students in grades 3 through 5 and how Catherine Fosnot and her colleagues introduce early multiplication strategies and show students how to work with the ratio table and the distributive property. Through 2 foundational books- *Investigating Multiplication and Division: Overview and The Big Dinner: Multiplication with the Ratio Table* -and nine online video clips, Cathy and her colleagues provide the strategies, lesson plans, and tools you'll need to transform your classroom into a community of young mathematicians. In the Overview book Cathy provides the professional understandings needed to establish a vibrant math workshop. After chronicling the motivations and ideals that inspire her work, Cathy describes how to help students construct the big ideas, strategies, and models that shape the landscape of learning. Ensuing sections describe the architecture of an

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investigation and explain how the predictability of this framework fosters independence and collaboration. In addition to describing the management systems that make these investigations rigorous and responsive, Cathy suggests ways to sequence instruction and highlight how units can be used to enhance your existing curriculum. Like the other units in the Contexts for Learning Mathematics series, *The Big Dinner: Multiplication with the Ratio Table* provides a two-week sequence of investigations, minilessons, games, and other contexts for learning. In this unit the preparation of a turkey dinner introduces early multiplication strategies and supports automatizing the facts, using the ratio table, and developing the distributive property with large numbers. Strings of problems guide learners toward computational fluency with whole-number multiplication and build automaticity with multiplication facts by focusing

on relationships. The nine accompanying video clips include live from-the-classroom video footage of the unit in action and narrated slide shows that describe the ideals that shape the math workshop and the thinking behind the Contexts for Learning Mathematics series. (Video clips are free for 6 months upon registration. You must register within 6 months of purchase.) Learn more about these resources and the series at [www.contextsforlearning.com](http://www.contextsforlearning.com). This pack is part of firsthand's Getting Started series. Bridging the gap between educational theory and practice, firsthand classroom materials model the carefully crafted techniques and language of master teachers in ways that help teachers refine their practice and reinvent their own teaching. The most comprehensive of these resources span more than a year of instruction. Firsthand's Getting Started Packs were created for teachers in training and professional book study

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groups who want a compact, affordable way to study and tryout these transformative classroom materials. Each Getting Started Pack includes an overview book, a complete unit of study, online video clips provided free of charge for 6 months, and an accompanying study guide. Getting Started packs include: Launch a Primary Writing Workshop, Grades K-2; Launch an Intermediate Writing Workshop, Grades 3-5; Launch an Intermediate Reading Workshop, Grades 3-5; Introduce the Qualities of Writing, Grades 3-6; Monitor Comprehension with Primary Students, Grades K-2; Monitor Comprehension with Intermediate Students, Grades 3-6; Investigate the Number System, Grades K-3; Investigate Multiplication, Grades 3-5; Investigate Fractions, Grades 4-6.

### **Equity In Mathematics**

**Education** - Gabriele Kaiser  
2005-08-08

This text provides a critical overview of current thinking about equity issues in the

teaching and learning of mathematics. Grounded in feminist theories of curriculum change and a broad range of cultural perspectives, the new approaches described here go beyond "special programmes" and "experimental treatments" designed to correct perceived problems and deficits. Instead they establish how improved instructional practices and a fuller understanding of the nature of the mathematical enterprise can overcome the systemic obstacles that have thwarted women's participation in this important field.; This book will appeal to all those who are interested in the mathematical education of women, including teachers, parents, administrators and researchers.

**Intentional Talk** - Elham Kazemi 2014

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

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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 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. [Guiding Children's Learning of Mathematics](#) - Art Johnson 2016-12-05

This thorough and practical guide to teaching mathematics for grades K-6 is a perfect combination of a math methods text and resource book for pre-service and in-service elementary school teachers. The text's organization uses the Common Core State Standards as its overarching framework. Over 275 lesson activities reinforce the standards and include many examples of cooperative learning strategies, take-home activities, and activities using technology such as apps. Content chapters first develop a math topic, and then extend the same topic, providing foundational material that can be used throughout the elementary grades. Other useful features highlight misconceptions often held about math operations and concepts, ways to be inclusive

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of various cultural backgrounds, and key technology resources. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

**Mathematics Framework for California Public Schools** - California. Department of Education 1999

**Error Patterns in Computation** - Robert B. Ashlock 2002

This book is the only one of its kind that instructs teachers to identify typical error patterns, to receive feedback on their diagnosis, and to gain insight regarding why a child may have adopted an incorrect procedure. Revised to link content to the new NCTM Standards, this new edition emphasizes the meaning of operations and using the appropriate method of computation. As in previous editions, it retains its focus on placing paper-and pencil instructional activities within the context of problem solving.

Chapter topics cover diagnosing misconceptions and error patterns in computation, providing needed instruction in computation, and helping students who have learned error patterns. For mathematics teachers of special education classes or at the middle school level.

**Games for Early Number Sense** - Antonia Cameron 2008-03

"Contexts for Learning Mathematics" series is designed to support a conceptual understanding of essential mathematical ideas, strategies and models. Each unit provides a two-week sequence of investigation, minilessons, games, and other contexts for learning. The series' 18 classroom-tested units are organized into grade-appropriate levels

Muffles' Truffles - Antonia Cameron 2008-03

Contexts for Learning Mathematics series by Catherine Fosnot and colleagues from Mathematics in the City and the Freudenthal Institute uses carefully crafted

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math situations to foster a deep conceptual understanding of essential mathematical ideas, strategies, and models.

*Handbook of Mobile Teaching and Learning* - Yu (Aimee)

Zhang 2015-10-14

Mobile technologies have been used in higher education for many years. They provide good solutions for teaching and learning and make learning available anywhere and anytime. This book includes six sections: design, development, adoption, collaboration, evaluation and future of mobile teaching and learning technology in higher education. It includes different projects and practices in higher education across different countries. The book provides in-depth background information and cases studies in high technology teaching and learning and future expectations for new technology in higher education. The variety of projects and programs running in different country helps boost innovation and discussion in future projects and practices. It also

provide guidelines for future design and development of mobile applications for higher education.

*The California Frog-Jumping Contest* - William Jacob  
2008-03

"Contexts for Learning Mathematics" series is designed to support a conceptual understanding of essential mathematical ideas, strategies and models. Each unit provides a two-week sequence of investigation, minilessons, games, and other contexts for learning. The series' 18 classroom-tested units are organized into grade-appropriate levels.

**Math Problem Solving in Action** - Nicki Newton

2017-02-10

In this new book from popular math consultant and bestselling author Dr. Nicki Newton, you'll learn how to help students become more effective and confident problem solvers. Problem solving is a necessary skill for the 21st century but can be overwhelming for both teachers and students. Dr.

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Newton shows how to make word problems more engaging and relatable, how to scaffold them and help students with math language, how to implement collaborative groups for problem solving, how to assess student progress, and much more. Topics include: Incorporating problem solving throughout the math block, connecting problems to students' real lives, and teaching students to persevere; Unpacking word problems across the curriculum and making them more comprehensible to students; Scaffolding word problems so that students can organize all the pieces in doable ways; Helping students navigate the complex language in a word problem; Showing students how to reason about, model, and discuss word problems; Using fun mini-lessons to engage students in the premise of a word problem; Implementing collaborative structures, such as math literature circles, to engage students in problem solving; Getting the whole school

involved in a problem-solving challenge to promote schoolwide effort and engagement; and Incorporating assessment to see where students are and help them get to the next level. Each chapter offers examples, charts, and tools that you can use immediately. The book also features an action plan so that you can confidently move forward and implement the book's ideas in your own classroom. Free accompanying resources are provided on the author's website, [www.drnickinewton.com](http://www.drnickinewton.com).  
The Teachers' Lounge - Catherine Twomey Fosnot 2008-03  
Contexts for Learning Mathematics series by Catherine Fosnot and colleagues from Mathematics in the City and the Freudenthal Institute uses carefully crafted math situations to foster a deep conceptual understanding of essential mathematical ideas, strategies, and models.  
Rhoda Red and Loretta Leghorn - Catherine Twomey Fosnot 2018-03-25

This kindergarten unit in the Contexts for Learning Mathematics series introduces the 5- and 10-bead Mathracks(TM). The unit builds on children's innate ability to subitize small amounts (1, 2, and 3) and uses it to develop the five-structure, eventually supporting children to see 5 inside of 7, and 5 inside of 8, for example. In the second week of the unit the 10-structure is developed, first as  $5+5$ , and then relationships between equivalent facts are explored and developed using compensation and associativity, for example,  $3+7=4+6=5+5$ .

*Math Exchanges* - Kassia Omohundro Wedekind 2011 Traditionally, small-group math instruction has been used as a format for reaching children who struggle to understand. Math coach Kassia Omohundro Wedekind uses small-group instruction as the centerpiece of her math workshop approach, engaging all students in rigorous "math exchanges." The key characteristics of these mathematical conversations

are that they are: 1) short, focused sessions that bring all mathematical minds together, 2) responsive to the needs of the specific group of mathematicians, and 3) designed for meaningful, guided reflection. As in reading and writing workshop, students in math workshop become self-directed and independent while participating in a classroom community of learners.

Through the math exchanges, students focus on number sense and the big ideas of mathematics. Teachers guide the conversations with small groups of students, mediating talk and thinking as students share problem-solving strategies, discuss how math works, and move toward more effective and efficient approaches and greater mathematical understanding. Although grounded in theory and research, *Math Exchanges: Guiding Young Mathematicians in Small Group Meetings* is written for practicing teachers and answers such questions as the following: How can I use a math workshop approach and

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follow a certain textbook or set of standards? How should I form small groups? How often should I meet with small groups? What should I focus on

in small groups? How can I tell if my groups are making progress? What do small-group math exchanges look like, sound like, and feel like?