

big ideas math kindergarten

big ideas math kindergarten is an essential foundational program designed to introduce young learners to critical mathematical concepts. This curriculum focuses on fostering early numeracy skills, encouraging problem-solving, and developing a strong understanding of basic math principles. In kindergarten, children begin to explore numbers, shapes, measurement, and patterns, which are vital for their future academic success. The big ideas math kindergarten program emphasizes hands-on learning, visual aids, and interactive activities to engage students effectively. This article will explore the core components of the big ideas math kindergarten curriculum, the teaching strategies employed, and how it supports cognitive development in early childhood. Additionally, the discussion will cover how parents and educators can utilize these concepts to enhance learning outcomes. Understanding these elements provides insight into why big ideas math kindergarten is a highly regarded approach in early math education.

- Overview of Big Ideas Math Kindergarten Curriculum
- Key Mathematical Concepts in Kindergarten
- Teaching Strategies for Big Ideas Math Kindergarten
- Supporting Cognitive Development through Math
- Role of Parents and Educators

Overview of Big Ideas Math Kindergarten Curriculum

The big ideas math kindergarten curriculum is structured to build a strong mathematical foundation by integrating essential concepts with engaging instructional approaches. This curriculum aligns with national educational standards and focuses on critical areas such as number sense, operations, geometry, measurement, and data interpretation. By emphasizing conceptual understanding alongside procedural skills, big ideas math kindergarten ensures that children not only learn how to perform math tasks but also grasp the reasoning behind them. The curriculum is designed to accommodate diverse learning styles and incorporates a range of activities including manipulatives, visual models, and technology tools to support differentiated instruction.

Curriculum Structure and Components

The curriculum is organized into units that progressively introduce mathematical ideas in a logical

sequence. Each unit contains lessons that blend direct instruction with exploratory tasks, promoting both teacher guidance and student discovery. Key components include:

- Number recognition and counting
- Basic addition and subtraction
- Shape identification and attributes
- Measurement concepts such as length and weight
- Pattern recognition and creation

This structure supports gradual mastery and encourages repeated practice through varied exercises.

Alignment with Educational Standards

Big ideas math kindergarten is designed to meet Common Core State Standards (CCSS) and other state-specific guidelines. By adhering to these standards, the curriculum ensures that students acquire the skills necessary for academic progression. The focus on problem-solving and reasoning aligns with broader educational goals to develop critical thinking abilities early on.

Key Mathematical Concepts in Kindergarten

Kindergarten is a pivotal stage for introducing fundamental math ideas that serve as building blocks for all future mathematical learning. The big ideas math kindergarten curriculum highlights several core concepts that children need to master during this formative year.

Number Sense and Counting

Number sense is the ability to understand and work with numbers flexibly. In kindergarten, students learn to count fluently, understand the relationship between numbers, and develop an awareness of quantity. They practice counting objects, recognizing numerals, and comparing numbers to determine which is greater or smaller. This foundational skill is crucial for developing arithmetic proficiency.

Basic Operations: Addition and Subtraction

Introducing addition and subtraction concepts early helps children understand how numbers combine and

separate. Big ideas math kindergarten employs visual aids such as counters, number lines, and story problems to demonstrate these operations in practical contexts. This approach builds a conceptual framework that supports mental math and problem-solving.

Geometry and Spatial Awareness

Recognizing shapes and understanding their properties form an important part of the kindergarten math experience. Children learn to identify common shapes, describe their attributes, and explore spatial relationships. This develops their ability to visualize and manipulate objects, skills that are vital for higher-level math and science learning.

Measurement and Comparison

Kindergarten students begin to grasp measurement concepts by comparing objects based on length, weight, and volume. Activities often include ordering objects from shortest to longest or heaviest to lightest. These experiences introduce standard and non-standard units of measurement, fostering an understanding of quantitative relationships.

Patterns and Sorting

Recognizing and creating patterns enhances logical thinking and prediction skills. Big ideas math kindergarten encourages children to identify repeating patterns and categorize objects based on attributes such as color, size, or shape. These tasks strengthen classification skills and prepare students for algebraic thinking.

Teaching Strategies for Big Ideas Math Kindergarten

Effective teaching strategies are critical for the success of the big ideas math kindergarten curriculum. Educators use a variety of approaches to make mathematical concepts accessible and engaging for young learners.

Hands-On Learning and Manipulatives

Manipulatives such as blocks, counters, and shape tiles provide tactile experiences that help students internalize abstract concepts. These tools encourage exploration and experimentation, making math tangible and understandable. Hands-on activities also support kinesthetic learners and enhance memory retention.

Visual Models and Representations

Visual aids like number lines, charts, and diagrams help children see mathematical relationships clearly. The use of pictures and symbols bridges concrete experiences with abstract thinking, facilitating deeper comprehension. Visual models are particularly effective in teaching addition, subtraction, and geometry.

Interactive and Collaborative Learning

Group activities and math games promote social interaction and cooperative problem-solving. Collaborative learning encourages students to explain their thinking, listen to peers, and develop communication skills. This dynamic environment fosters engagement and motivation.

Incorporation of Technology

Technology integration, including educational software and interactive whiteboards, enhances instruction by providing immediate feedback and adaptive challenges. Digital tools can personalize learning experiences and cater to individual student needs within the big ideas math kindergarten framework.

Assessment and Feedback

Ongoing assessment through observations, informal quizzes, and performance tasks allows teachers to monitor progress and adjust instruction accordingly. Constructive feedback helps students build confidence and identify areas for improvement.

Supporting Cognitive Development through Math

Engaging with big ideas math kindergarten concepts contributes significantly to overall cognitive growth in young children. Mathematical learning promotes critical thinking, problem-solving, and logical reasoning skills that extend beyond the classroom.

Enhancing Problem-Solving Abilities

Mathematics encourages children to analyze situations, recognize patterns, and develop strategies to find solutions. This nurtures flexible thinking and adaptability, which are essential cognitive skills in all areas of life.

Developing Memory and Attention

Working with numbers and sequences supports memory retention and focus. Activities that require counting, sorting, and pattern identification improve attention span and the ability to follow multi-step directions.

Fostering Language and Communication Skills

Math instruction often involves explaining reasoning and describing processes, which enhances vocabulary and verbal expression. These language skills are critical for academic success and social interaction.

Role of Parents and Educators

Parents and educators play a vital role in reinforcing the big ideas math kindergarten curriculum outside formal instruction. Their involvement can significantly impact a child's enthusiasm and achievement in mathematics.

Creating a Math-Friendly Environment

Providing access to counting toys, puzzles, and everyday math activities at home encourages children to practice skills informally. A positive attitude toward math fosters curiosity and reduces anxiety related to learning challenges.

Engaging in Math Talk

Discussing numbers, shapes, and patterns during daily routines helps children see math in real-world contexts. Asking open-ended questions and encouraging explanations deepens understanding and critical thinking.

Collaborating with Teachers

Regular communication between parents and educators ensures consistent support for the child's learning needs. Sharing observations and progress helps tailor instruction and address difficulties promptly.

Utilizing Resources and Activities

Access to educational materials aligned with big ideas math kindergarten, such as workbooks and online

games, supplements classroom learning. Structured activities that reinforce concepts promote skill mastery and confidence.

Frequently Asked Questions

What is Big Ideas Math Kindergarten curriculum focused on?

The Big Ideas Math Kindergarten curriculum focuses on building foundational math skills such as counting, number recognition, basic addition and subtraction, shapes, patterns, and measurement through engaging and interactive activities.

How does Big Ideas Math Kindergarten support diverse learning styles?

Big Ideas Math Kindergarten supports diverse learning styles by incorporating visual aids, hands-on activities, story problems, and digital resources that cater to auditory, visual, and kinesthetic learners.

Are there online resources available for Big Ideas Math Kindergarten?

Yes, Big Ideas Math Kindergarten offers online resources including interactive lessons, practice exercises, games, and assessments accessible through their digital platform to enhance student engagement and learning.

How can parents help their children with Big Ideas Math Kindergarten at home?

Parents can support their children by using the Big Ideas Math Kindergarten resources such as practice worksheets, interactive games, and by encouraging daily math conversations and activities that relate to real-life situations.

What are some key skills children will learn in Big Ideas Math Kindergarten?

Children will learn key skills including counting to 100, understanding number relationships, basic addition and subtraction, recognizing shapes and patterns, comparing sizes and quantities, and developing problem-solving skills.

Additional Resources

1. *Big Ideas Math: Kindergarten Foundations*

This book introduces young learners to fundamental math concepts such as counting, shapes, and simple addition. Through colorful illustrations and engaging activities, children develop number sense and problem-solving skills. It emphasizes hands-on learning to build a strong mathematical foundation.

2. *Kindergarten Math: Exploring Numbers and Patterns*

Designed for kindergarteners, this book focuses on recognizing numbers, understanding patterns, and early geometry. The interactive exercises encourage children to identify shapes, sort objects, and create simple patterns, fostering critical thinking. It supports big ideas in math by connecting concepts to everyday experiences.

3. *Big Ideas Math for Little Learners*

This book simplifies complex math ideas for young children, using stories and playful activities. It covers counting, comparing quantities, and basic measurement, helping kids grasp the core principles of mathematics. The engaging format nurtures curiosity and a love for math from an early age.

4. *Kindergarten Math Adventures: Big Ideas in Numbers*

Through fun adventures and problem-solving challenges, this book introduces big math ideas like addition, subtraction, and spatial reasoning. It encourages children to think critically and apply math in real-world contexts. The colorful illustrations and interactive tasks make learning math enjoyable and accessible.

5. *Building Mathematical Minds: Kindergarten Big Ideas*

This resource focuses on developing reasoning and communication skills in math for kindergarten students. It integrates counting, shapes, measurement, and data interpretation with activities that promote discussion and exploration. The book aims to build a comprehensive understanding of big math ideas early on.

6. *Early Math Concepts: Big Ideas for Kindergarten*

Covering essential math domains, this book introduces number sense, patterns, and basic operations through engaging stories and games. It emphasizes conceptual understanding over memorization, helping children internalize math principles. The activities are designed to support diverse learning styles and foster confidence.

7. *Kindergarten Counting and Big Ideas in Math*

Focused on counting skills and number recognition, this book incorporates big ideas such as quantity comparison and sequencing. It uses interactive exercises and visual aids to make math tangible and fun. The book supports early learners in developing a strong numerical foundation.

8. *Shapes, Sizes, and Big Ideas: Kindergarten Math*

This book explores geometry and measurement concepts tailored for kindergarteners. Children learn to identify shapes, compare sizes, and understand spatial relationships through hands-on activities. It connects these big ideas to real-life situations, enhancing comprehension and retention.

9. *Big Ideas Math Stories for Kindergarten*

Combining storytelling with math concepts, this book introduces big ideas like addition, subtraction, and

pattern recognition. The narrative approach helps children relate to math in everyday contexts, making abstract ideas more concrete. It encourages active participation and discussion to deepen understanding.

Big Ideas Math Kindergarten

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big ideas math kindergarten: Understanding the Math We Teach and How to Teach It, K-8 Small Marian, 2025-08-26 Dr. Marian Small has written a landmark book for a wide range of educational settings and audiences, from pre-service math methods courses to ongoing professional learning for experienced teachers. *Understanding the Math We Teach and How to Teach It, K-8* focuses on the big mathematical ideas in elementary and middle school grade levels and shows how to teach those concepts using a student-centered, problem-solving approach. Comprehensive and Readable: Dr. Small helps all teachers deepen their content knowledge by illustrating core mathematical themes with sample problems, clear visuals, and plain language Big Focus on Student Thinking: The book's tools, models, and discussion questions are designed to understand student thinking and nudge it forward. Particularly popular features include charts listing common student misconceptions and ways to address them, a table of suggested manipulatives for each topic, and a list of related children's book *Implementing Standards That Make Sense*: By focusing on key mathematics principles, *Understanding the Math We Teach and How to Teach It, K-8* helps to explain the whys of state standards and provides teachers with a deeper understanding of number sense, operations, algebraic thinking, geometry, and other critical topics Dr. Small, a former dean with more than 40 years in the field, conceived the book as an essential guide for teachers throughout their career: Many teachers who teach at the K-8 level have not had the luxury of specialist training in mathematics, yet they are expected to teach an increasingly sophisticated curriculum to an increasingly diverse student population in a climate where there are heightened public expectations. They deserve help.

big ideas math kindergarten: 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 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?

big ideas math kindergarten: Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade K Jo Boaler, Jen Munson, Cathy Williams, 2020-08-14 Engage students in mathematics using growth mindset techniques The most challenging parts of teaching mathematics are engaging students and helping them understand the connections between mathematics concepts. In this volume, you'll find a collection of low floor, high ceiling tasks that will help you do just that, by looking at the big ideas at the kindergarten-grade level through visualization, play, and investigation. During their work with tens of thousands of teachers, authors Jo Boaler, Jen Munson, and Cathy Williams heard the same message—that they want to incorporate more brain science into their math instruction, but they need guidance in the techniques that work best to get across the concepts they needed to teach. So the authors designed Mindset Mathematics around the principle of active student engagement, with tasks that reflect the latest brain science on learning. Open, creative, and visual math tasks have been shown to improve student test scores, and more importantly change their relationship with mathematics and start believing in their own potential. The tasks in Mindset Mathematics reflect the lessons from brain science that: There is no such thing as a math person - anyone can learn mathematics to high levels. Mistakes, struggle and challenge are the most important times for brain growth. Speed is unimportant in mathematics. Mathematics is a visual and beautiful subject, and our brains want to think visually about mathematics. With engaging questions, open-ended tasks, and four-color visuals that will help kids get excited about mathematics, Mindset Mathematics is organized around nine big ideas which emphasize the connections within the Common Core State Standards (CCSS) and can be used with any current curriculum.

big ideas math kindergarten: Every Math Learner, Grades 6-12 Nanci N. Smith, 2017-02-02 Differentiation that shifts your instruction and boosts ALL student learning! Nationally recognized math differentiation expert Nanci Smith debunks the myths surrounding differentiated instruction, revealing a practical approach to real learning differences. Theory-lite and practice-heavy, this book provides a concrete and manageable framework for helping all students know, understand, and even enjoy doing mathematics. Busy secondary mathematics educators learn to Provide practical structures for assessing how students learn and process mathematical concepts information Design, implement, manage, and formatively assess and respond to learning in a standards-aligned differentiated classroom Adjust current materials to better meet students' needs Includes classroom videos and a companion website.

big ideas math kindergarten: Teaching Mathematics through Problem-Solving in K-12 Classrooms Matthew Oldridge, 2018-10-31 “Teaching through problem-solving” is a commonly used phrase for mathematics educators. This book shows how to use worthwhile and interesting mathematics tasks and problems to build a classroom culture based on students’ reasoning and thinking. It develops a set of axioms about problem-solving classrooms to show teachers that mathematics is playful and engaging. It presents an aspirational vision for school mathematics, one which all teachers can bring into being in their classrooms.

big ideas math kindergarten: Teaching by Design in Elementary Mathematics, Grades K-1 Jennifer Stepanek, Melinda Leong, Linda Griffin, Lisa Lavelle, 2010-11-16 Strengthen your mathematics lessons through collaborative planning Teaching by Design in Elementary Mathematics is a series of comprehensive professional development guides that help teachers investigate how students learn. Grounded in the latest research, this book is one of three volumes focused on grade-appropriate number and operations topics aligned with the Common Core State Standards. The capstone activity of each book guides the group through the co-creation and implementation of a prototype lesson. The teacher teams then evaluate the impact of the lesson on student learning and work together to revise it for maximum effectiveness. Through the process, teachers develop: Deeper content knowledge of important mathematical concepts Improved understanding of how students learn these mathematical ideas A stronger foundation for developing effective lessons and

improving instruction Enhanced collaboration skills Each volume includes a large assortment of reproducible handouts as well as built-in facilitation notes. Teachers will also find helpful resources that address the issue of finding time for school-based professional development and teacher collaboration.

big ideas math kindergarten: Handbook of Research on the Education of Young Children Bernard Spodek, Olivia N. Saracho, 2014-01-27 The Handbook of Research on the Education of Young Children, Second Edition is an essential reference on research in early childhood education not only in the United States but throughout the world. It provides a comprehensive overview of important contemporary issues and the information necessary to make judgments about these issues. The field has changed significantly since the publication of the first edition of this Handbook in 1993, creating a need for an update. The Handbook of Research on the Education of Young Children, Second Edition is thus focused on research conducted over the past decade or so. The volume is organized in four parts: *Early Childhood Education and Child Development. New in this edition: moral development; the development of creativity. *Early Childhood Educational Curriculum. New in this edition: movement or dance education; the education of linguistically and culturally diverse children. *Foundations of Early Childhood Educational Policy. New in this edition: childhood poverty; the education of bilingual children. *Research and Evaluation Strategies for Early Childhood Education. New in this edition: doing historical research in early childhood education; postmodern and feminist orientations. The Handbook of Research on the Education of Young Children, Second Edition makes the expanding knowledge base related to early childhood education readily available and accessible. It is a valuable tool for all who work and study in the field.

big ideas math kindergarten: Bridging the Gap Between Arithmetic & Algebra Bradley S. Witzel, 2015-11-15 Although two federal panels have concluded that all students can learn mathematics and most can succeed through Algebra 2, the abstractness of algebra and missing precursor understandings may be overwhelming to many students ... and their teachers. Bridging the Gap Between Arithmetic & Algebra responds to this need for instruction and interventions that go beyond typical math lesson plans. Providing a review of evidence-based practices, the book is an essential reference for mathematics teachers and special education teachers when teaching mathematics to students who struggle with the critical concepts and skills necessary for success in algebra. Audiences: General education (mathematics) teachers, special education teachers, administrators, teacher educators.

big ideas math kindergarten: Academic Language in Diverse Classrooms: Mathematics, Grades K-2 Margo Gottlieb, Gisela Ernst-Slavit, 2013-03-12 Help your students unlock important mathematical concepts If you've ever watched a student struggle with learning math concepts, you know that academic English can sometimes create stumbling blocks to understanding. To grasp complicated concepts, build skills, and demonstrate achievement, students need to master academic language in math. But how do you teach academic language when you're so busy teaching math? With this guide, you'll build a curricular framework that integrates language and cultural supports with math content during lesson planning, implementation, and reflection. You'll learn to Understand the role of language within the math principles of the Common Core Identify potential obstacles to understanding Incorporate academic language into standards-referenced unit targets and lesson objectives Collaborate with ELL specialists to help students access the curriculum Each grade-specific chapter models the types of interactions and learning experiences that help students master both math content and academic language. This essential book shows you why mastery of academic language is the key to students' academic success.

big ideas math kindergarten: Teaching Young Children Mathematics Sydney L. Schwartz, 2005-09-30 Children learn mathematics most effectively in contexts that are meaningful to them. Realizing the potential of these contexts for fostering young children's mathematical learning while nurturing and challenging them, requires knowledge of mathematics as well as of child development. Avoiding the debates surrounding hands-on learning vs. direct instruction, the author focuses on the value of different contexts for learning, and illustrates ways to genuinely engage

children as active learners. The work is rich with examples of children's interactions with each other and with adults as they utilize and extend their understanding of mathematics. Examples and guidelines for developing lessons and activities will be useful to educators and parents. Chapters explore how we underestimate young children's mathematical capabilities; how appropriate sequencing of learning and building on prior knowledge will enhance understanding; what teachers, including parent-teachers, need to know; and high-stakes testing. This is a work that brings together the connections between knowing the basics and constructing knowledge in accessible and practical ways.

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big ideas math kindergarten: Math Instruction for Students with Learning Problems Susan Perry Gurganus, 2017-02-24 Math Instruction for Students with Learning Problems, Second Edition provides a research-based approach to mathematics instruction designed to build confidence and competence in pre- and in-service PreK-12 teachers. This core textbook addresses teacher and student attitudes toward mathematics, as well as language issues, specific mathematics disabilities, prior experiences, and cognitive and metacognitive factors. The material is rich with opportunities for class activities and field extensions, and the second edition has been fully updated to reference both NCTM and CCSSM standards throughout the text and includes an entirely new chapter on measurement and data analysis.

big ideas math kindergarten: Implementing a Standards-Based Curriculum in the Early Childhood Classroom Lora Bailey, 2017-05-25 Implementing a Standards-Based Curriculum in the Early Childhood Classroom demonstrates how pre-service and in-service teachers can develop mathematics, language arts, and integrated curricula suitable for equipping young children with the knowledge, dispositions, and skills needed to operate successfully as 21st century learners. Chapters promote family-school partnerships, and each content area chapter (mathematics, language arts and integrated curriculum) will demonstrate assessment practices proven to be effective for detecting the impact of specific early childhood teaching methods on student learning.

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big ideas math kindergarten: Getting Your Math Message Out to Parents Nancy Litton, 1998 Tackle the tricky issue of bridging the communication gap between teachers, students, and their parents. This unique resource explore the various channels--newsletters, back-to-school-night presentations, homework, and more--through which teachers can communicate with parents about

their children's math education.

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big ideas math kindergarten: The Mathematics Lesson-Planning Handbook, Grades K-2 Beth McCord Kobett, Ruth Harbin Miles, Lois A. Williams, 2018-02-09 This book brings together the best of Visible Learning and the teaching of mathematics. The chapters on learning intentions, success criteria, misconceptions, formative evaluation, and knowing thy impact are stunning. Rich in exemplars, grounded in research about practice, and with the right balance about the surface and deep learning in math, it's a great go-to book for all who teach mathematics. —John Hattie, Laureate Professor, Deputy Dean of MGSE, Director of the Melbourne Education Research Institute, Melbourne Graduate School of Education Your blueprint to planning K-2 math lessons for maximum impact and understanding Not sure of tomorrow morning's lesson plan? Or maybe you feel it isn't tailored enough for your students' needs. What do you do? For that and more, help is here. The Mathematics Lesson-Planning Handbook, Grades K-2: Your Blueprint for Building Cohesive Lessons guides teachers step-by-step through the decision-making process of planning K-2 math lessons that are purposeful, rigorous, and coherent. Instructional experts Beth McCord Kobett, Ruth Harbin Miles, and Lois A. Williams streamline and deepen the lesson-planning process showing teachers how to access students' complex needs, clarify learning intentions, and select tasks that will best lead to student understanding of mathematical concepts and skills. Along the way, teachers create an individualized blueprint for planning K-2 math lessons for maximum student learning. The lesson-planning process guides teachers to: Identify the mathematical content, language, and social learning intentions for a lesson or unit, and connect goals to success criteria Determine the purpose of a math lesson you're planning by distinguishing between conceptual understanding, procedural fluency, and transfer Select worthwhile tasks and materials that make the best use of representations, manipulatives, and other instructional tools and resources Choose the format of your lesson using reasoning and number routines, games, whole-class discussion, and pairs, or small-group work Anticipate student misconceptions and evaluate understanding using a variety of formative assessment techniques Decide how you'll launch your lesson, facilitate questioning, encourage productive struggle, and close your lesson Included is a lesson-planning template and examples from kindergarten, first-, and second-grade classrooms. Chapter by chapter, the decision-making strategies empower teachers to plan math lessons strategically, to teach with intention and confidence, and to build an exceptional foundation in math for all students.

big ideas math kindergarten: STEM Education Across the Learning Continuum Amy MacDonald, Lena Danaia, Steve Murphy, 2020-02-18 This is the first comprehensive book to consider STEM education from early childhood through to senior secondary education. It approaches STEM as a form of real-world, problem-based education that draws on the knowledge and skills of the science, technology, engineering and mathematics disciplines. Rather than presenting each of the separate disciplines to an equal extent, it focuses on STEM researchers' perspectives on how their work contributes to effective STEM education in terms of building knowledge, skills and engagement. Gathering contributions by authors from various countries, the book explores effective STEM education from a range of perspectives within the international context. Moreover, it addresses critical issues in STEM education, including transition and trajectories, gender, rurality, socioeconomic status and cultural diversity. By doing so, it not only shares the current state of knowledge in this field, but also offers a source of inspiration for future research.

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