Mathematical Explorations - Alan F. Beardon 2016-10-13 Mathematical Explorations follows on from the author’s previous book, Creative Mathematics, in the same series, and gives the reader experience in working on problems requiring a little more mathematical maturity. The author’s main aim is to show that problems are often solved by using mathematics that is not obviously connected to the problem, and readers are encouraged to consider as wide a variety of mathematical ideas as possible. In each case, the emphasis is placed on the important underlying ideas rather than on the solutions for their own sake. To enhance understanding of how mathematical research is conducted, each problem has been chosen not for its mathematical importance, but because it provides a good illustration of how arguments can be developed. While the reader does not require a deep mathematical background to tackle these problems, they will find their mathematical understanding is enriched by attempting to solve them.

Science and Math Explorations for Young Children - Kathleen Barrett 1999 Science and Math Explorations For Young Children is a synthesis of current ideas in early childhood education, illuminating new directions in science and math learning. Successful techniques and strategies are outlined using GEMS activities as examples. This new handbook emphasizes the importance of early experiences to a child’s success. Science and Math Explorations For Young Children is a synthesis of current ideas in early childhood education, illuminating new directions in science and math learning. Successful techniques and strategies are outlined using GEMS activities as examples. This new handbook emphasizes the importance of early experiences to a child’s success.

Playing with Infinity - Rózsa Péter 2012 Popular account ranges from counting to mathematical logic and covers many concepts related to infinity: graphic and geometric representations of the infinite, the Hilbert paradox, the Cantor set, a new logic for infinity, paradoxes of the infinite, and the impasse of classical analysis.

Innovations & Outcomes - Alan F. Beardon 2016-10-13 Mathematical Explorations follows on from the author’s previous book, Creative Mathematics, in the same series, and gives the reader experience in working on problems requiring a little more mathematical maturity. The author’s main aim is to show that problems are often solved by using mathematics that is not obviously connected to the problem, and readers are encouraged to consider as wide a variety of mathematical ideas as possible. In each case, the emphasis is placed on the important underlying ideas rather than on the solutions for their own sake. To enhance understanding of how mathematical research is conducted, each problem has been chosen not for its mathematical importance, but because it provides a good illustration of how arguments can be developed. While the reader does not require a deep mathematical background to tackle these problems, they will find their mathematical understanding is enriched by attempting to solve them.

Mathematical Explorations in Behavioral Science - Fred Massarik 1965 One Minute Mysteries - Eric Yoder 2008-04-15 "...challenges readers of all ages to accept super sleuths. These fun mysteries are each one minute long and have a unique twist—you need to tap into your mathematical wisdom to solve them."—From publisher description.

Mathematics Explorations and Applications - David M. Davison 1995-06-01 Explorations in Mathematical Physics - Don Koks 2006-08-15 Have you ever wondered why the language of modern physics centres on geometry? Or how quantum operators and Dirac brackets work? What a rotation really is? What tension are all about? Or what field theory and Lagrangian are, and you will see how the accelerated frames of special relativity tell us about gravity. On the journey, you will discover how tensor notation relates to vector calculus, how differential geometry is built on intuitive concepts, and how variational calculus leads to field theory. You will meet quantum measurement theory, along with Green functions and the art of complex integration, and finally general relativity and cosmology. The book takes a fresh approach to tensor analysis built solely on the metric and vectors, with no need for one-dimensional rotations. You will see how a much more geometrical and intuitive insight into vector and tensor calculus, together with general relativity, than do traditional, more abstract methods. Don Koks is a physicist at the Defence Science and Technology Organisation in Adelaide, Australia. His doctorate in quantum cosmology was obtained within the Department of Physics and Mathematics at Adelaide University. Perv work at the University of Auckland specialised in applied acoustics, along with pure and applied mathematics.

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Early Mathematical Explorations - Nicola Yelland 2014-01-20 Early Mathematical Explorations shows readers how to provide young children with rich mathematical learning environments and experiences. This book presents teachers with a sound theoretical framework to encourage children to become numerate in the twenty-first century. It shows that mathematical learning can occur in a variety of ways, including when children explore ideas through play, problem solving and problem posing; engage in a rich variety of mathematical learning experiences; pursue self-directed activities and cooperate with others; and make connections between ideas and experiences in their everyday worlds. Chapters 2 and 3 explore the ways in which mathematical understandings can be supported from birth to five years. Chapters 4-9 provide an overview of mathematics in the early primary years. The final chapters illustrate the contexts and connections that can be made in early mathematical learning. Early Mathematical Explorations is an essential resource for pre- and in-service teachers alike.

Spark Your Child's Success in Math and Science - Jacqueline Barber 2002 Presents advice on how to foster a child's love of learning in mathematics and science, discussing helpful parental involvement, the presentation of educational opportunities, and the use of a variety of learning styles.

The Prime Number Conspiracy - Thomas Lin 2018-12-04 Quanta Magazine's stories of mathematical explorations show that "inspiration strikes willy-nilly," revealing surprising solutions and exciting discoveries. If you're a science and data nerd like me, you may be interested in "Alice and Bob Meet the Wall of Fire" and "The Prime Number Conspiracy" from Quanta Magazine and Thomas Lin. - Bill Gates These stories from Quanta Magazine map the routes of mathematical exploration, showing readers how cutting-edge research is done, while illuminating the productive tension between conjecture and proof, theory and intuition. The stories show that, as James Gleick puts it in the foreword, "inspiration strikes willy-nilly." One researcher thinks of quantum chaotic systems at a bus stop; another suddenly realizes a path to proving a theorem on number theory while in a friend's backyard; a statistician has a "bathroom sink epiphany" and discovers the key to solving the Gaussian correlation inequality. Readers of The Prime Number Conspiracy, says Quanta editor-in-chief Thomas Lin, are headed on "breathtaking intellectual journeys to the bleeding edge of discovery strapped to the narrative rocket of humanity's never-ending pursuit of knowledge." Quanta is the only popular publication that offers in-depth coverage of the latest breakthroughs in understanding our mathematical universe. It communicates mathematics by taking it seriously, wrestling with difficult concepts and clearly explaining them in a way that speaks to our innate curiosity about our world and ourselves. Readers of this volume will learn that prime numbers are not just about "interesting curiosities," but are also crucial to the workings of our digital world. They will learn of the famous "Goldbach Conjecture" and its relation to cryptography, and of the "Twin Prime Conjecture" and its potential implications for the distribution of prime numbers. The stories show that, as James Gleick puts it in the foreword, "inspiration strikes willy-nilly." One researcher thinks of quantum chaotic systems at a bus stop; another suddenly realizes a path to proving a theorem on number theory while in a friend's backyard; a statistician has a "bathroom sink epiphany" and discovers the key to solving the Gaussian correlation inequality. Readers of The Prime Number Conspiracy, says Quanta editor-in-chief Thomas Lin, are headed on "breathtaking intellectual journeys to the bleeding edge of discovery strapped to the narrative rocket of humanity's never-ending pursuit of knowledge." Quanta is the only popular publication that offers in-depth coverage of the latest breakthroughs in understanding our mathematical universe. It communicates mathematics by taking it seriously, wrestling with difficult concepts and clearly explaining them in a way that speaks to our innate curiosity about our world and ourselves. Readers of this volume will learn that prime numbers are not just about "interesting curiosities," but are also crucial to the workings of our digital world. They will learn of the famous "Goldbach Conjecture" and its relation to cryptography, and of the "Twin Prime Conjecture" and its potential implications for the distribution of prime numbers.

Hands-on Science and Math - Beth R. Davis 2015 Gives parents lots of ideas for early teaching of children when it comes to science and math principles.

A parent's guide to great explorations in math and science. Teacher's ed - 1991

Parent's Guide to Great Explorations in Math & Science (GEMS) Or How to Help Your Kids Succeed in Math and Science and Have Fun Your Self-

Mathematical explorations in behavioral science - Fred Massarik 1965

Mega Projects - Chairs Greenes 1996 Students apply concepts, skills, and strategies from mathematics, science, and social studies to carry out the investigations in these projects.

Designing Professional Development for Teachers of Science and Mathematics - Suwan Loucks-Horsley 2003-02-14 Updated Edition of Best Seller! Now in its second edition, this resource guides professional developers, administrators, and teacher leaders to design learning experiences for teachers that are directly linked to improving student learning.

Storytime Mathtime - Patricia Satariano 1994 Lessons derived from 18 quality children's books -- including Caps for Sale, Millions of Cats, Curious George Rides a Bike, and Cherries and Cherry Pits -- with hands-on science explorations that bring math and science to life.

Activities for Science Centers, Grade 2-5 - L. Pearce 2009-01-04 Daily discoveries with science centers! Activities for the Science Center helps students in grades 2-5 explore concepts in life science, earth science, and physical science through hands-on experiments. It also explains the scientific principles behind each experiment.

Discovery Science - David A. Winitz 1996

Cows in the Maze - Ian Stewart 2010 Following on the success of his books Math Hysteria and How to Cut a Cake, Ian Stewart is back with more stories and puzzles that are as quirky as they are fascinating, and each from the cutting edge of the world of mathematics. From the maths of mazes, to cows, to the twist, and the amazing spheres–one of the first stories ever told, and how to make one–Cows in the Maze takes readers on an exhilarating tour of the world of mathematics. We find out about the mathematics of time travel, explore the shape of heartbeats (which are not tear-drop shaped, but something much, much more strange), dance with dodecahedra, and play the game of Hex, among many more strange and delightful mathematical diversions. In the title essay, Stewart introduces readers to Robert Abbott's mind-bending "Where Are the Cows?" maze, which changes every time you pass through it, and is said to be the most difficult maze ever invented. In addition, he shows how a 90-year-old woman and a computer scientist cracked a long-standing question about counting magic squares, describes the mathematical patterns in animal movement (walk, trot, gallop), looks at a fusion of art, mathematics, and the physics of sand piles, and reveals how mathematicians can--and do--prove a negative. Populated by amazing creatures, strange characters, and astonishing mathematics explained in an accessible and fun way, and illustrated with quirky cartoons by artist Spike Gerrell, Cows in the Maze will delight everyone who loves mathematics, puzzles and mathematical conundrums.

Once Upon a GEMS Guide - Jacqueline Barber 1993 Contains literature-based activities linked to various GEMS publications.

Science and Math Explorations for Young Children - Junction, 2018-06-01 A parent's guide to great explorations in math and science.