Mathematics Courses Wake County Public School System

An enrichment resource providing explanations and examples to help young students understand, review and reinforce math concepts. For use with any math program.

As Manny Scott travels the world speaking to students and educators, he meets young people whose stories sound a lot like his own—a childhood that was marked by poverty, instability, violence, and despair until a few caring educators showed him how to find meaning in the classroom and gave him a glimpse of his own possibilities. So many kids he meets today need this kind of hope and pr can an individual teacher do to help traumatized children believe in themselves, succeed in school, and graduate prepared for work and life? Here, you'll find answers. With the same passion that inspires so many who hear him speak, Scott presents an approach informed by the teachers who helped him and honed through years of connecting with kids who desperately need someone to show the can do to prepare yourself for the hard work of making a difference and offers advice for bridging cultural divides, earning students' trust, and equipping them to take responsibility for their own success. This book is a reminder of the incredible power every teacher has to help young people rewrite their destinies—and it's a call to action for all who read it.

To determine the effects of using the Technology Connections initiative and philosophy on students' scale scores on eighth-grade North Carolina End-of-Grade Tests in reading and math and on the Multiple-Choice and Performance North Carolina Tests of Computer Skills, the researcher used a quasi-experimental nonequivalent group. The pre-post group consisted of all eighth-grade students in g a pretest and posttest in reading or math, had not been retained in grade 8, and had been in membership in the system for at least 140 days. The post-test-only group consisted of students in grade 8 who were administered one or both parts of the Tests of Computer Skills and who had not been retained. The experimental group consisted of all grade 8 students in schools that had been name computers in their classrooms and were instructed using constructivist and brain research philosophy. The comparison group had use of a computer lab with the same frequency as the experimental group, but their classrooms had no computers, nor were their teachers trained in constructivist theory and brain research. Both groups were administered the North Carolina Tests of Computer Skil for all tests for 10 student subgroups designated in No Child Left Behind legislation. No significant differences were found for treatment groups in scale scores on pre- and post-test End-of-Grade tests in reading or math, except for the Asian and White subgroups in the experimental group that showed a statistically significant difference on the section of the Computer Skills Tests with the following exceptions: (a) the Black subgroup in the experimental group showed statistically significant differences on the multiple-c.

Living Proof
Patterns, Proofs, and the Search for the Ultimate Equation
Secondary Two Mathematics
A Process Approach (Student Text)
Theoretical Frameworks and New Directions
How Scarcity Will Remake American Politics
How Big Data Increases Inequality and Threatens Democracy

This richly updated third edition of Math Instruction for Students with Learning Difficulties presents a research-based approach to mathematics instruction designed to build confidence and competence in preservice and inservice PreK- 12 teachers. Referencing benchmarks of both the National Council of Teachers of Mathematics and Common Core State Standards for Mathematics, this essential text addresses teacher and student attitudes towards mathematics as well as language issues, specific mathematics disabilities, prior experiences, and cognitive and metacognitive factors. Chapters on assessment and instruction precede strands that focus on critical concepts. Replete with suggestions for class activities and field extensions, the new edition features current research across topics and an innovative thread throughout chapters and strands: multi-tiered systems of support as they apply to mathematics instruction.

Tools and Processes in Mathematics Teacher Education describes and analyze various promising tools and processes, from different perspectives, aimed at facilitating mathematics teacher learning/development. It provides insights of how mathematics teacher educators think about and approach their work with teachers.

The SAT is a national college entrance examination offered by the College Board and consists of three parts: Mathematics, Critical Reading, and Writing. The top score for each part is 800, for a total possible score of 2400. Colleges use SAT scores, in conjunction with other tools, to measure students' potential for success at the postsecondary level. Although students can take the SAT multiple times, only scores from their most recently taken test are reported in College Board's College-Bound Seniors report. In 2013-14, students in Wake County Public School System (WCPSS) continued to score 60-70 points higher on the SAT compared to students in NC and across the nation. All major WCPSS ethnic groups also continued to score significantly higher than their peers. Fifty-four percent of WCPSS students met the College Board's College and Career Readiness Benchmark. North Carolina had 41% of its students meeting the benchmark, while the nation had 43%. Continued improvements on college entrance exams are likely to be driven by student exposure to rigorous curriculum and high-level coursework. Schools are encouraged to find ways to prepare all students to engage in rigorous experiences in high school. An appendix includes additional information and data on participation rates in WCPSS, North Carolina, and the US and WCPSS SAT Rates by School.

Resources in Education
WCPSS High School Retention 2011-12. Research Watch. D& A Report No. 13.15
Stories of Resilience Along the Mathematical Journey
Using Data to Make Good Things Happen
The Mathematics of Love
Family Math
Student Edition Grade 4
Math 1 B

Christopher Emdin is an assistant professor of science education and director of secondary school initiatives at the Urban Science Education Center at Teachers College, Columbia University. He holds a Ph.D. in urban education with a concentration in mathematics, science and technology; a master's degree in natural sciences; and a bachelor's degree in physical ant

Retention means repeating one or more courses in high school. Over 3,500 high school students were retained in 2011-12 in Wake County Public School (WCPSS), with the largest numbers in grades 9 and 10. Some students enter high school below grade level. In 2011-12, half the WCPSS high schools had greater than 30% of students enter high school below grade level in mathematics based on end-of-grade (EOG) scores from grade 8. Of retained students in grade 9: nearly two-thirds failed English I; more than half failed science and social studies; and nearly half failed mathematics. In addition, 1 in 5 retained students in grade 9 passed English I, but were missing credit in another course subject. While high schools hav (e.g.,"bridging" courses and general supports) the supports examined were limited and/or underutilized, with the exception of mathematics support courses. Fewer than 15% of students who entered high school below grade level were enrolled in a reading support course. Based on the study's findings, it is recommended that staff: identify and utilize early indicators availability and usage of middle and high school supports for struggling students and monitor their success; and examine practices that may help lower retention rates. The following are appended: (1) Percentage of Retained High School Students in 2011-12 by Percentage of Students Entering High School Below Grade Level in Reading; (2) Summary of Logistic Regr 2011-12; and (3) School-Based Programs Targeting High School Students with Weak Academic Performance.

How Well are American Students Learning? : with Studies of NAEP Math Items, Middle School Math Teachers, and the Revamped Blue Ribbon Schools Awards
The Technology Connections Initiative in the Wake County Public School System and Its Effect on Scale Scores and Passing Rates on State Tests
Grade 2
Algebra I
Updating Algebra for All?
Handbook of Competence and Motivation, Second Edition
Math in the Garden

The second edition of this groundbreaking textbook is designed to help education professionals interested in building effective and comprehensive educational opportunities for gifted secondary students. The Handbook of Secondary Gifted Education offers an in-depth, research-based look at ways schools and classrooms can support the development of gifted adolescents. The book is the most comprehensive critical resource on this topic available. Each chapter of this educational resource is written by leading scholars and researchers in the field. The second edition includes sections on STEM, CCSS alignment, and 21st-century skills, along with discussion of working with secondary students in various content areas. The purpose of the book is to provide a research-based handbook that views gifted adolescents and their needs as the starting point for building an effective, integrated educational program.

A report of the methodology and results of 211 grants awarded by the NSF's program called Gender Diversity in STEM Education. These grants encompass programs conducted at all educational levels, and include both professional development and formal and informal activities.

The theory of networks is a very lively one, both in terms of developments in the theory itself and of the variety of its applications. This book, based on the 1981 AMS Short Course on the Mathematics of Networks, introduces most of the basic ideas of network theory and develops some of these ideas considerably. A number of more specialized topics are introduced, including areas of active research and a wide variety of applications. Frank Boesch gives the basic definitions in the mathematics of networks and in the closely-related topic of graph theory. He discusses two of the most fundamental network problems -- the shortest path problem and the minimum spanning tree problem as well as some of their variants. Boesch also gives an interesting presentation in the area of network reliability. Frances Yao considers maximum flows in networks, the problem most often thought of in connection with the mathematics of networks. Richard Karp gives an account of the computational complexity of network problems. Using the case study method, Shen Lin demonstrates the effective use of heuristic algorithms in network design. Four applications of the mathematics of networks are presented by Daniel Kleitman. These include: the design of irrigation systems, the theory of electrical networks, the scheduling of delivery trucks, and the physics of ice. Finally, Nicholas Pippenger presents a chapter on telephone switching networks, an area of network theory that leads to difficult mathematics drawn from such apparently unrelated fields as harmonic analysis.

Weapons of Math Destruction
Making Young Voters
Evidence from the Wake County Public School System
The Age of Austerity
Middle School Math Acceleration and Equitable Access to 8th Grade Algebra
International Handbook of Mathematics Teacher Education: Volume 2
Hearing Before the Committee on Science, House of Representatives, One Hundred Sixth Congress, First Session, April 28, 1999

One of our most prescient political observers provides a sobering account of how pitched battles over scarce resources will increasingly define American politics in the coming years—and how we might avoid, or at least mitigate, the damage from these ideological and economic battles. In a matter of just three years, a bitter struggle over limited resources has enveloped political discourse at every level in the United States. Fights between haves and have-nots over health care, unemployment benefits, funding for mortgage write-downs, economic stimulus legislation—and, at the local level, over cuts in police protection, garbage collection, and in the number of teachers—have dominated the debate. Elected officials are being forced to make zero-sum choices—or worse, choices with no winners. Resource competition between Democrats and Republicans has left each side determined to protect what it has at the expense of the other. The major issues of the next few years—long-term deficit reduction; entitlement reform, notably of Social Security, Medicare, and Medicaid; major cuts in defense spending; and difficulty in financing a continuation of American international involvement—suggest that your-gain-is-my-loss politics will inevitably intensify.

Computer Applications -- Physical Sciences and Engineering.
Demonstrates how math has a place in sports. Utilizes elementary problem solving activities.
The Mathematics of Networks
Race-neutral Alternatives in American Education
Based on the Book by Jean Kerr Stenmark, Virginia Thompson and Ruth Cossey ; Illustrated by Marilyn Hill
Quantitative Literacy
Sports Math
Using Big Data for Good
Analytics Stories

Now completely revised (over 90% new), this handbook established the concept of competence as an organizing framework for the field of achievement motivation. With an increased focus on connecting theory to application, the second edition incorporates diverse perspectives on why and how individuals are motivated to work toward competence in school, work, sports, and other settings. Leading authorities present cutting-edge findings on the psychological, sociocultural, and biological processes that shape competence motivation across development, analyzing the role of intelligence, self-regulated learning, emotions, creativity, gender and racial stereotypes, self-perceptions, achievement values, parenting practices, teacher behaviors, workplace environments, and many other factors. As a special bonus, purchasers of the second edition can download a supplemental e-book featuring several notable, highly cited chapters from the first edition. New to This Edition *Most chapters are new, reflecting over a decade of theoretical and methodological developments. *Each chapter now has an applied as well as conceptual focus, showcasing advances in intervention research. *Additional topics: self-regulation in early childhood, self-determination theory, challenge and threat appraisals, performance incentives, achievement emotions, job burnout, gene-environment interactions, class-based models of competence, and the impact of social group membership. *Supplemental e-book featuring selected chapters from the prior edition.

Wow! This is a powerful book that addresses a long-standing elephant in the mathematics room. Many people learning math ask ``Why is math so hard for me while everyone else understands it?'' and ``Am I good enough to succeed in math?'' In answering these questions the book shares personal stories from many now-accomplished mathematicians affirming that ``You are not alone; math is hard for everyone'' and ``Yes; you are good enough.'' Along the way the book addresses other issues such as biases and prejudices that mathematicians encounter, and it provides inspiration and emotional support for mathematicians ranging from the experienced professor to the struggling mathematics student. --Michael Dorff, MAA President This book is a remarkable collection of personal reflections on what it means to be, and to become, a mathematician. Each story reveals a unique and refreshing understanding of the barriers erected by our cultural focus on ``math is hard.'' Indeed, mathematics is hard, and so are many other things--as Stephen Kennedy points out in his cogent introduction. This collection of essays offers inspiration to students of mathematics and to mathematicians at every career stage. --Jill Pipher, AMS President This book is published in cooperation with the Mathematical Association of America.

Spengler's work describes how we have entered into a centuries-long "world-historical" phase comparable to late antiquity, and his controversial ideas spark debate over the meaning of historiography.

A Course in Solving Real-World Problems
Urban Science Education for the Hip-Hop Generation
Wake County Public School System (WCPSS). Measuring Up. D&A Report No. 14.14
Even on Your Worst Day, You Can Be a Student's Best Hope
The Arithmetic Teacher
The Handbook of Secondary Gifted Education
Industrial Mathematics

The solution to youth voter turnout requires focus on helping young people follow through on their political interests and intentions.

Inform your own analyses by seeing how one of the best data analysts in the world approaches analytics problems Analytics Stories: How to Make Good Things Happen is a thoughtful, incisive, and entertaining exploration of the application of analytics to real-world problems and situations. Covering fields as diverse as sports, finance, politics, healthcare, and business, Analytics Stories bridges the gap between the oft inscrutable world of data analytics and the concrete problems it solves. Distinguished professor and author Wayne L. Winston answers questions like: Was Liverpool over Barcelona the greatest upset in sports history? Was Derek Jeter a great infielder What's wrong with the NFL QB rating? How did Madoff keep his fund going? Does a mutual fund's past performance predict future performance? What caused the Crash of 2008? Can we predict where crimes are likely to occur? Is the lot of the American worker improving? How can analytics save the US Republic? The birth of evidence-based medicine: How did James Lind know citrus fruits cured scurvy? How can I objectively compare hospitals? How can we predict heart attacks in real time? How does a retail store know if you're pregnant? How can I use A/B testing to improve sales from my website? How can analytics help me write a hit song? Perfect for anyone with the word "analyst" in their job title, Analytics Stories illuminates the process of applying analytic principles to practical problems and highlights the potential pitfalls that await careless analysts.

The fourth edition of Developmental-Behavioral Pediatrics—the pioneering, original text— emphasizes children's assets and liabilities, not just categorical labels. It includes fresh perspectives from new editors—Drs. William Coleman, Ellen Elias, and Heidi Feldman, as well as further contributions from two of the original editors, William B. Carey, M.D, and Allen C. Crocker, M.D. This comprehensive resource offers information and guidance on normal development and behavior: genetic influences, the effect of general physical illness and psychosocial and biologic factors on development and behavior. It is also sufficiently scholarly and scientific to serve as a definitive reference for researchers, teachers, and consultants. With a more user-friendly design, this resource offers comprehensive guidance. Features new chapters dealing with genetic influences on

development and behavior, crisis management, coping strategies, self-esteem, self-control, and inborn errors of metabolism to cover the considerable advances and latest developments in the field. Focuses on the clinical aspects of function and dysfunction, rather than arranging subjects according to categorical labels. Emphasizes children's assets as well as their liability so you get a well-developed approach to therapeutic management. Concludes each chapter with a summary of the principle points covered, with tables, pictures and diagrams to clarify and enhance the presentation. Offers a highly practical focus, emphasizing evaluation, counseling, medical treatment, and follow-up. Features superb photos and figures that illustrate a wide variety of concepts. Features new chapters dealing with—Genetic Influences on Development and Behavior, Crisis Management, Coping Strategies, Self-Esteem, Self-Control, and Inborn Errors of Metabolism. Presents a new two-color design and artwork for a more visually appealing and accessible layout. Provides the latest drug information in the updated and revised chapters on psychopharmacology. Introduces Drs. William Coleman, Ellen Elias, and Heidi Feldman to the editorial team to provide current and topical guidance and enrich the range of expertise and clinical experience. Covers the considerable advances and latest developments in this subspecialty through updates and revisions to existing material.

Why Numeracy Matters for Schools and Colleges
A Practical Guide to Analytics for Governments
Developmental-Behavioral Pediatrics E-Book
Assessment in Mathematics Education Contexts
Scott Foresman-Addison Wesley Mathematics
The Decline of the West
Elementary Program Handbook

In this must-have for anyone who wants to better understand their love life, a mathematician pulls back the curtain and reveals the hidden patterns—from dating sites to divorce, sex to marriage—behind the rituals of love. The roller coaster of romance is hard to quantify; defining how lovers might feel from a set of simple equations is impossible. But that doesn't mean that mathematics isn't a crucial tool for understanding love. Love, like most things in life, is full of patterns. And mathematics is ultimately the study of patterns—from predicting the weather to the fluctuations of the stock market, the movement of planets or the growth of cities. These patterns twist and turn and warp and evolve just as the rituals of love do. In The Mathematics of Love, Dr. Hannah Fry takes the reader on a fascinating journey through the patterns that define our love lives, applying mathematical formulas to the most common yet complex questions pertaining to love: What's the chance of finding love? What's the probability that it will last? How do online dating algorithms work, exactly? Can game theory help us decide who to approach in a bar? At what point in your dating life should you settle down? From evaluating the best strategies for online dating to defining the nebulous concept of beauty, Dr. Fry proves—with great insight, wit, and fun—that math is a surprisingly useful tool to negotiate the complicated, often baffling, sometimes infuriating, always interesting, mysteries of love.

Math 1 A

Analytics can make government work better—this book shows you how A Practical Guide to Analytics for Governments provides demonstrations of real-world analytics applications for legislators, policy-makers, and support staff at the federal, state, and local levels. Big data and analytics are transforming industries across the board, and government can reap many of those same benefits by applying analytics to processes and programs already in place. From healthcare delivery and child well-being, to crime and program fraud, analytics can—in fact, already does—transform the way government works. This book shows you how analytics can be implemented in your own milieu: What is the downstream impact of new legislation? How can we make programs more efficient? Is it possible to predict policy outcomes without analytics? How do I get started building analytics into my government organization? The answers are all here, with accessible explanations and useful advice from an expert in the field. Analytics allows you to mine your data to create a holistic picture of your constituents; this model helps you tailor programs, fine-tune legislation, and serve the populace more effectively. This book walks you through analytics as applied to government, and shows you how to reap Big data's benefits at whatever level necessary. Learn how analytics is already transforming government service delivery Delve into the digital healthcare revolution Use analytics to improve education, juvenile justice, and other child-focused areas Apply analytics to transportation, criminal justice, fraud, and much more Legislators and policy makers have plenty of great ideas—but how do they put those ideas into play? Analytics can play a crucial role in getting the job done well. A Practical Guide to Analytics for Governments provides advice, perspective, and real-world guidance for public servants everywhere.

Tools and Processes in Mathematics Teacher Education (Second Edition)
Math Instruction for Students with Learning Difficulties
Converting Civic Attitudes into Civic Action
SAT Scores, 2013-14
K-12 Math and Science Education, what is Being Done to Improve It?
Girls in Science and Engineering
Great Source Math to Know

Longlisted for the National Book Award New York Times Bestseller A former Wall Street quant sounds an alarm on the mathematical models that pervade modern life -- and threaten to rip apart our social fabric We live in the age of the algorithm. Increasingly, the decisions that affect our lives--where we go to school, whether we get a car loan, how much we pay for health insurance--are being made not by humans, but by mathematical models. In theory, this should lead to greater fairness: Everyone is judged according to the same rules, and bias is eliminated. But as Cathy O'Neil reveals in this urgent and necessary book, the opposite is true. The models being used today are opaque, unregulated, and uncontestable, even when they're wrong. Most troubling, they reinforce discrimination: If a poor student can't get a loan because a lending model deems him too risky (by virtue of his zip code), he's then cut off from the kind of education that could pull him out of poverty, and a vicious spiral ensues. Models are propping up the lucky and punishing the downtrodden, creating a "toxic cocktail for democracy." Welcome to the dark side of Big Data. Tracing the arc of a person's life, O'Neil exposes the black box models that shape our future, both as individuals and as a society. These "weapons of math destruction" score teachers and students, sort r sum s, grant (or deny) loans, evaluate workers, target voters, set parole, and monitor our health. O'Neil calls on modelers to take more responsibility for their algorithms and on policy makers to regulate their use. But in the end, it's up to us to become more savvy about the models that govern our lives. This important book empowers us to ask the tough questions, uncover the truth, and demand change. -- Longlist for National Book Award (Non-Fiction) -- Goodreads, semi-finalist for the 2016 Goodreads Choice Awards (Science and Technology) -- Kirkus, Best Books of 2016 -- New York Times, 100 Notable Books of 2016 (Non-Fiction) -- The Guardian, Best Books of 2016 -- WBUR's "On Point," Best Books of 2016: Staff Picks -- Boston Globe, Best Books of 2016, Non-Fiction

This book aims to provide theoretical discussions of assessment development and implementation in mathematics education contexts, as well as to offer readers discussions of assessment related to instruction and affective areas, such as attitudes and beliefs. By providing readers with theoretical implications of assessment creation and implementation, this volume demonstrates how validation studies have the potential to advance the field of mathematics education. Including chapters addressing a variety of established and budding areas within assessment and evaluation in mathematics education contexts, this book brings fundamental issues together with new areas of application.

The Wake County Public School System (WCPSS) in North Carolina recently addressed the issue of advancement in and equitable access to advanced mathematics. Under a recent policy, WCPSS uses a SAS-generated predicted probabilities of students' success in obtaining a passing score on the NC Algebra I End-of-Course (EOC) exam, to determine recommended course placement in grades 6 through 8. The authors examine the question: do students who are just eligible for advancement in mathematics in middle school and who participate in advanced mathematics lead to improved academic outcomes compared to students who just miss being eligible for advancement and who do not enroll in advanced mathematics? By focusing on the students on the margin of eligibility under this policy the authors use a regression-discontinuity design to estimate the causal impact of this mathematics acceleration policy on subsequent test scores, grades, and course-taking behavior of middle-school students in Wake County who were exposed to this policy. The results indicate that students on the margin of eligibility and who participate in advanced mathematics in middle school may experience negative effects as a result of being in a peer group of more advanced ability, on average. Tables and figures are appended.

New Formulas for America's Workforce
Theory and Application
Math 1 B
Evidence of a Middle-Grades Math Acceleration Policy
The 2004 Brown Center Report on American Education
An Integrated Approach
Achieving Diversity

This year the Brown Center analyzes individual math items from the National Assessment of Education Progress (NAEP), attempting to gauge the countrys computation skills.

Math 1 A