

Essentials Of Science The Key Stage 3 Student

Why do we burp when we take a swig of a fizzy drink? What are air and water actually made of? And when a liquid raw egg becomes a solid fried egg, can this change of state ever be reversible? Packed with hands-on investigations, this book explores topics including, the properties of solids, liquids, and gases, how liquids become solids and how solids become liquids, how the water cycle works, why seawater is salty, and how changing states make recycling possible. Readers will get the chance to do experiments including discovering if there is water vapor in the classroom around them, separating mixed up substances, and even weighing the air.

Essential Java serves as an introduction to the programming language, Java, for scientists and engineers, and can also be used by experienced programmers wishing to learn Java as an additional language. The book focuses on how Java, and object-oriented programming, can be used to solve science and engineering problems. Many examples are included from a number of different scientific and engineering areas, as well as from business and everyday life. Pre-written packages of code are provided to help in such areas as input/output, matrix manipulation and scientific graphing. Takes a 'dive-in' approach, getting the reader writing and running programs immediately Teaches object-oriented programming for problem-solving in engineering and science

Explores science's new biological understanding of essential oils for improved immunity and treatment of degenerative diseases • Explains how essential oils convey the complex natural healing powers of plants, offering scientifically proven advantages over synthetic drugs • Offers revolutionary essential oil treatments to ameliorate the side effects of chemotherapy and other cancer treatments as well as for hepatitis, osteoporosis, liver detoxification, and the prevention of UV damage and melanoma • Presents simple recipes and protocols for strengthening the immune system; for treatment of common ailments, such as colds, flu, herpes, and candida; and for pain management Exploring science's new biological understanding of essential oils and their advantages over synthetic drugs, renowned aromatherapist Kurt Schnaubelt reveals how the effectiveness of essential oil treatments stems from our common biochemical and cellular heritage with plants. He explains how essential oils preserve a plant's complex natural life-supporting and immune-building qualities, developed through millions of years of interaction with animals and humans. Reviewing recent research in molecular, cellular, and evolutionary biology, he shows how the multilayered activity of plant essences helps maintain the integrity of our genetic code--the reason why pathogens cannot develop resistance toward essential oils as they do with antibiotics and antivirals--making essential oils a more effective and sustainable form of treatment for a variety of health problems. Laying to rest old arguments over essential oils' alleged toxicity and whether they can be ingested or used undiluted, Schnaubelt presents simple recipes and protocols for treating and preventing common ailments, such as colds, flu, herpes, and candida, as well as for pain management. Offering new essential oil treatment opportunities for hepatitis, osteoporosis, liver detoxification, and the prevention of UV damage and melanoma, he shows how essential oils can also ameliorate the debilitating side effects of chemotherapy and other cancer treatments as well as how even home use of essential oils for relaxation or skin care can help build one's immunity and overall well-being.

Research is the systematic process of planning, investigating, and understanding a phenomenon in order to find answers to specific questions. This book describes and explains the essential foundations of the research process in the social sciences. It is guided by the notion that there is no such thing as one general "best" method, but that the choice of method depends upon the research problem and the purpose of the research. Key features of the book include: -- setting the stage from a philosophy of science perspective that emphasizes the need to choose the appropriate frame of reference for a given research problem -- describing the mindset that is necessary to work in a scientific way and the rules that apply, regardless of whether the researcher is a first year student or writing a Ph.D -- explaining the importance of theories, models, and methods for a systematic approach to literature reviews, use of secondary data, and empirical investigations -- introducing the fundamental characteristics of qualitative and quantitative methods and their implications for data collection and analysis -- clarifying the issues of verification and reflection in the evaluation of research studies

A comprehensive introduction to the multidisciplinary applications of mathematical methods, revised and updated The second edition of Essentials of Mathematical Methods in Science and Engineering offers an introduction to the key mathematical concepts of advanced calculus, differential equations, complex analysis, and introductory mathematical physics for students in engineering and physics research. The book's approachable style is designed in a modular format with each chapter covering a subject thoroughly and thus can be read independently. This updated second edition includes two new and extensive chapters that cover practical linear algebra and applications of linear algebra as well as a computer file that includes Matlab codes. To enhance understanding of the material presented, the text contains a collection of exercises at the end of each chapter. The author offers a coherent treatment of the topics with a style that makes the essential mathematical skills easily accessible to a multidisciplinary audience. This important text: • Includes derivations with sufficient detail so that the reader can follow them without searching for results in other parts of the book • Puts the emphasis on the analytic techniques • Contains two new chapters that explore linear algebra and its applications • Includes Matlab codes that the readers can use to practice with the methods introduced in the book Written for students in science and engineering, this new edition of Essentials of Mathematical Methods in Science and Engineering maintains all the successful features of the first edition and includes new information.

This text is an accessible, student-friendly introduction to the wide range of mathematical and statistical tools needed by the forensic scientist in the analysis, interpretation and presentation of experimental measurements. From a basis of high school mathematics, the book develops essential quantitative analysis techniques within the context of a broad range of forensic applications. This clearly structured text focuses on developing core mathematical skills together with an understanding of the calculations associated with the analysis of experimental work, including an emphasis on the use of

graphs and the evaluation of uncertainties. Through a broad study of probability and statistics, the reader is led ultimately to the use of Bayesian approaches to the evaluation of evidence within the court. In every section, forensic applications such as ballistics trajectories, post-mortem cooling, aspects of forensic pharmacokinetics, the matching of glass evidence, the formation of bloodstains and the interpretation of DNA profiles are discussed and examples of calculations are worked through. In every chapter there are numerous self-assessment problems to aid student learning. Its broad scope and forensically focused coverage make this book an essential text for students embarking on any degree course in forensic science or forensic analysis, as well as an invaluable reference for post-graduate students and forensic professionals. Key features: Offers a unique mix of mathematics and statistics topics, specifically tailored to a forensic science undergraduate degree. All topics illustrated with examples from the forensic science discipline. Written in an accessible, student-friendly way to engage interest and enhance learning and confidence. Assumes only a basic high-school level prior mathematical knowledge.

Get the science background you need to master massage therapy! Mosby's Essential Sciences for Therapeutic Massage, 6th Edition provides full-color, easy-to-read coverage of anatomy and physiology, biomechanics, kinesiology, and pathologic conditions for the entire body. Realistic examples apply A&P content directly to the practice of massage therapy, and learning activities help you review key material and develop critical thinking skills. Written by noted massage therapy educators Sandy Fritz and Luke Allen Fritz, this guide provides a solid foundation in the sciences and positions you for success on licensing and certification exams. Coverage of essential sciences and practical application helps you study for and pass licensing and certification exams, including the Massage and Bodywork Licensing Examination (MBLEx) and Board Certification in Therapeutic Massage and Bodywork (BCTMB). Over 700 full-color line drawings and photos show muscle locations, attachments, and actions - required knowledge for passing certification exams and for practicing massage therapy. ELAP-compliant content ensures that your skills and knowledge of massage therapy meet the proficiency recommendations of the Entry-Level Analysis Project. Learning features include chapter outlines, objectives, summaries, key terms, practical applications, multiple-choice review and discussion questions, plus workbook sections on Evolve. Biomechanics Basics chapter includes gait assessment and muscle testing activities along with critical thinking questions. Sections on pathologic conditions include suggestions for referral protocols as well as indications and contraindications for therapeutic massage. Coverage of nutrition explains how nutrition and nutritional products might affect or interfere with massage therapy, describing the basics of nutrition, the digestive process, and all of the main vitamins and minerals and their functions in the body. Practical Applications boxes include photos of massage techniques and settings, and help you learn competencies and apply material to real-world practice. Focus on Professionalism boxes summarize key information about ethics and best business practices. Mentoring Tips provide practical insight into important topics and on being a massage therapy professional. Learning How to Learn boxes at the beginning of each chapter make it easier to comprehend key concepts. Learn More on the Web boxes in the book and on Evolve suggest online resources for further reading and research. Quick Content Review in Question Form on Evolve reinforces the key material in each chapter and increases critical thinking skills. Appendix on diseases/conditions provides a quick reference to indications and contraindications, showing how pathologic conditions may affect the safety and efficacy of therapeutic massage. NEW! MBLEx preparation questions at the end of each chapter and additional questions on the Evolve companion website prepare you for the licensure examination. NEW! End-of-chapter case studies build your skills in critical thinking. UPDATED information provides the most current, accurate content to help you prepare for exams and practice. NEW! Expanded Evolve site provides content review and licensing exam preparation. UPDATED coverage of massage pathologies reflects what you will see in the field as a practitioner.

Memory is perhaps the most extraordinary phenomenon in the natural world. Every person's brain holds millions of bits of information in long-term storage. This vast memory store includes our extensive vocabulary and knowledge of language; the tremendous and unique variety of facts we've amassed; all the skills we've learned, from walking and talking to musical and athletic performance; many of the emotions we feel; and the continuous sensations, feelings, and understandings of the world we term consciousness. Without memory there can be no mind as we understand it. Focusing on cutting-edge research in behavioral science and neuroscience, Memory is a primer of our current scientific understanding of the mechanics of memory and learning. Over the past two decades, memory research has accelerated and we have seen an explosion of new knowledge about the brain. For example, there now exists a wide-ranging and successful applied science devoted exclusively to the study of memory that has yielded better procedures for eliciting valid recollections in legal settings and improved the diagnosis and treatment of memory disorders. Everyone fascinated by the scope and power of the human brain will find this book unforgettable.

This new edition of ESSENTIAL CHEMISTRY FOR SAFE AROMATHERAPY provides an accessible account of the key theoretical aspects of chemistry and their application into the safe practice of aromatherapy. For readers with a limited science background, this book offers a clear and concisely written guide to essential information in chemistry. For practitioners, the book applies chemistry to the practical and therapeutic use of essential oils, and leads to a better understanding of composition, properties and technical data related to essential oils. Takes the fear and mystery out of chemistry for aromatherapy students! Presents crucial information in a clear and easily-digestible format, highlighting key points all along Allows professional aromatherapists to practice with greater confidence, safety and skill, and to extend the range of their practice through a clearer understanding of chemical properties of essential oils. Covers the scope of what is taught at major aromatherapy teaching centres, and structures the material to make sure each chapter provides the reader with a rounded understanding of the topic covered. A glossary is included for easy reference. Fully-updated throughout Chapter 5, Analytical Techniques completely brought up to date Chapter 6 Oil Profiles updated to include those used in current training New section entitled 'In perspectives' covers risks and benefits, interpretation of clinical trials and experimental data, use of essential oils in aromatherapy and functional groups in relation to therapeutic properties

Chemistry for grades 9 to 12 is designed to aid in the review and practice of chemistry topics. Chemistry covers topics such as

metrics and measurements, matter, atomic structure, bonds, compounds, chemical equations, molarity, and acids and bases. The book includes realistic diagrams and engaging activities to support practice in all areas of chemistry. The 100+ Series science books span grades 5 to 12. The activities in each book reinforce essential science skill practice in the areas of life science, physical science, and earth science. The books include engaging, grade-appropriate activities and clear thumbnail answer keys. Each book has 128 pages and 100 pages (or more) of reproducible content to help students review and reinforce essential skills in individual science topics. The series will be aligned to current science standards.

This book is a completely revised and updated version of this invaluable text which allows science students to extend necessary skills and techniques, with the topics being developed through examples in science which are easily understood by students from a range of disciplines. The introductory approach eases students into the subject, progressing to cover topics relevant to first and second year study and support data analysis for final year projects. The revision of the material in the book has been matched, on the accompanying website, with the extensive use of video, providing worked answers to over 200 questions in the book plus additional tutorial support. The second edition has also improved the learning approach for key topic areas to make it even more accessible and user-friendly, making it a perfect resource for students of all abilities. The expanding website provides a wide range of support material, providing a study environment within which students can develop their independent learning skills, in addition to providing resources that can be used by tutors for integration into other science-based programmes. Hallmark Features: Applied approach providing mathematics and statistics from the first to final years of undergraduate science courses. Second edition substantially revised to improve the learning approach to key topics and the organisation of resources for ease of use in teaching. Companion website at www.wiley.com/go/currellmaths2 providing: Over 200 videos showing step-by-step workings of problems in the book. Additional materials including related topic areas, applications, and tutorials on Excel and Minitab. Interactive multiple-choice questions for self-testing, with step-by-step video feedback for any wrong answers. A developing resource of study plans for useful topics and applications. Figures from the book for downloading.

NSCA's Essentials of Sport Science provides the most contemporary and comprehensive overview of the field of sport science and the role of the sport scientist. It is a primary preparation resource for the Certified Performance and Sport Scientist (CPSS) certification exam.

Dive into a mind-bending exploration of the physics of black holes Black holes, predicted by Albert Einstein's general theory of relativity more than a century ago, have long intrigued scientists and the public with their bizarre and fantastical properties. Although Einstein understood that black holes were mathematical solutions to his equations, he never accepted their physical reality—a viewpoint many shared. This all changed in the 1960s and 1970s, when a deeper conceptual understanding of black holes developed just as new observations revealed the existence of quasars and X-ray binary star systems, whose mysterious properties could be explained by the presence of black holes. Black holes have since been the subject of intense research—and the physics governing how they behave and affect their surroundings is stranger and more mind-bending than any fiction. After introducing the basics of the special and general theories of relativity, this book describes black holes both as astrophysical objects and theoretical “laboratories” in which physicists can test their understanding of gravitational, quantum, and thermal physics. From Schwarzschild black holes to rotating and colliding black holes, and from gravitational radiation to Hawking radiation and information loss, Steven Gubser and Frans Pretorius use creative thought experiments and analogies to explain their subject accessibly. They also describe the decades-long quest to observe the universe in gravitational waves, which recently resulted in the LIGO observatories' detection of the distinctive gravitational wave “chirp” of two colliding black holes—the first direct observation of black holes' existence. The Little Book of Black Holes takes readers deep into the mysterious heart of the subject, offering rare clarity of insight into the physics that makes black holes simple yet destructive manifestations of geometric destiny. A concise science assessment text that helps K–12 teachers master the effective science assessment methods that lead to improved student learning Presenting both traditional and innovative assessment methods integral to science teaching and learning, Essentials of Science Classroom Assessment shows teachers the connection between effective science assessment and improved student learning. The text uses a competence-based approach consistent with the National Science Education Standards to help teachers master assessment skills, apply them to science classroom instruction, and evaluate their impact on student learning. Key Features and Benefits Provides practical examples from both elementary and secondary science classrooms to demonstrate how to design a wide variety of traditional and innovative assessment methods Presents case scenarios in each chapter that help teachers reflect on the assessment issues they will encounter in their own classrooms Includes end-of-chapter checklists and practice questions that allow readers to check their mastery of assessment skills before moving on, as well as annotated bibliographies that direct them to additional readings on topics of interest

If you are teaching - or learning - to teach primary science, this is the toolkit to support you! Highly respected and widely used, Essential Primary Science 2E blends essential subject knowledge with a vast array of teacher activities. Updated and revised throughout to reflect the requirements of the new National Curriculum, it covers the essential knowledge and understanding that you need; plus it offers over 200 great ideas for teaching primary science at KS1 and KS2 - so no more late nights thinking up creative new ways to teach key concepts! Written in a friendly and supportive style this new edition offers: Over 200 original and new activities to complement the new curriculum, ready for you to try out in the classroom Tips on how to ensure each lesson includes both practical and investigative elements Suggestions on how to make your lessons engaging, memorable and inclusive How to deal with learners' common scientific misconceptions in each topic Two new chapters on working scientifically and how to tackle assessment New up-to-date web links to quality free resources Drawing on their own extensive teaching experience and understanding of the new National Curriculum, the authors provide the essential guide to teaching primary science for both trainee teachers and qualified teachers who are not science specialists.

A student-friendly approach to KS3 This coursebook covers topics appropriate for KS3 Year 7 Science and accurately reflects the language and content of the new Programme of Study. Along with the Year 8 and 9 coursebooks full coverage of the KS3 programme of study is provided.

Lippincott Williams & Wilkins is proud to introduce Essentials of Radiologic Science, the nucleus of excellence for your radiologic technology curriculum! An exciting new first edition, this core, comprehensive textbook for radiologic technology students focuses on the crucial components and minimizing extraneous content. This text will help prepare students for success on the American Registry of Radiologic Technologists Examination in Radiography and beyond into practice. Topics covered include radiation protection, equipment operation and quality control, image production and evaluation, and patient care. This is a key and crucial

resource for radiologic technology programs, focusing on the most relevant information and offering tools and resources to students of multiple learning types. These include a full suite of ancillary products, a variety of pedagogical features embedded in the text, and a strong focus on the practical application of the concepts presented.

These worksheets provide further practice to test and reinforce understanding of the material covered in the KS2 Science Revision Guide.

Grab a cup of coffee, sit down, and have a conversation with the author about the three keys to teaching science. In a super practical, easy-to-read manner, she explains these essential elements in detail and helps you fit the key pieces of the science puzzle into lesson plans that fit your students. This book's friendly conversational tone makes for a quick, encouraging read that will leave you excited to teach science!

This text presents an accessible problem-based approach to integrated medical sciences using case scenarios to facilitate students taking their pre-clinical or basic sciences examinations.

Finally, an exciting and dynamic way to communicate the basic concepts of elementary science to your young learner! Science Essentials—The most thorough and comprehensive early learning science guide available! Appealing illustrations, easy-to-understand directions, and varied creative activities make learning about the solar system fun and easy. This complete guide is also a great supplement for science and reading curricula. What makes Science Essentials so different from other books? It's the most complete book that offers: • Chapters on the Triassic, Jurassic, and Cretaceous Periods. • Cutout fact cards and games. • Vivid, full-color illustrations to spark the learner's interest. • Answer key to measure student performance. Science Essentials—your essential early learning science guide!

How can elementary school teachers—the proverbial jacks-of-all-trades—feel more confident in their knowledge of science and teach science more effectively? The Essentials of Science, K-6 aims to unleash every elementary educator's inner science teacher. Through a plethora of classroom examples, interviews with award-winning elementary science teachers and science education experts, and a wide-ranging look at recent research examining the state of science education, readers will learn * How to align curriculum to state standards using such practices as backward design. * How to use inquiry-based science to infuse meaning into class investigations and teach students problem-solving skills. * Strategies for engaging students and keeping the curriculum fresh. * Ways to increase English language learners' participation in and understanding of science. * How to use formative assessment techniques to determine what students know both before and during lessons. * How professional development can orient teachers to new content and to a deeper way of seeing the natural world. With the right practices, science teachers can make their students' journey into learning about the natural world both productive and enjoyable. The Essentials of Science, K-6 provides practical information to help teachers reflect on their own approaches to teaching science and make the transition from apprehension to self-assurance.

Thoroughly examines the geological, physical, chemical, and biological aspects of oceanography while illustrating the function and interaction of each process in the ocean environment. The discussions reflect current knowledge in the field, covering such topics as the Law of the Sea, deep sea drilling projects, and the effects of hydrothermal vents on sea water chemistry. Chapters contain vocabulary lists (with each word written in boldface as it is introduced in the text), summaries of key points, study questions, and suggestions for further reading. Assumes no prior knowledge in related math and science.

Concepts of physics and cosmology, chemistry, biology and evolution, and Earth are all broken down into seven essential elements to make each accessible.

Xix, 260 p. : ill. ;

Contains over 200 activities ready for you to try out in your classroom! FREE SAMPLE CHAPTER <http://www.mcgraw-hill.co.uk/openup/chapters/9780335234615.pdf> If you are teaching or learning to teach primary science, this is the toolkit to support you! Not only does it cover the essential knowledge and understanding that you need to know, it also offers over 200 great ideas for teaching primary science - so no more late nights thinking up creative new ways to teach key concepts! In addition, this book offers you practical guiding principles which you can apply to every lesson. There are tips on how to ensure each lesson includes both practical and investigative elements and suggestions on how to make your lessons engaging, memorable and inclusive. Each chapter is organized around the following structure: What science do you need to know and understand? What science do your pupils need to learn? What is the best way to teach these topics in the primary classroom at KS1 and KS2? Sample pupil activities are also included and there is coverage of how to deal with common misconceptions within every chapter. Written in a friendly style, the authors draw on their own teaching experience and understanding of the National Curriculum and QTS standards to provide an essential guide to teaching primary science.

Finally, an exciting and dynamic way to communicate the basic concepts of elementary science to your young learner! Science Essentials—The most thorough and comprehensive early learning science guide available! Designed by leading experts in the field of science education, this hands-on guide provides children in grades 3–4 with the tools they need to become actively involved with science. Science Essentials leads children through the processes of observation and experimentation, prediction and drawing conclusions. What makes Science Essentials so different from other books? It's the most complete book that offers: • Challenging and motivating science investigations. • Hands-on approach to science learning. • Complete direction and examples to encourage independent study. • Vivid, full-color illustrations to spark the learner's interest. • Answer key to measure student performance. Science Essentials—your essential early learning science guide!

An Introduction to Forensic Genetics is a comprehensive introduction to this fast moving area from the collection of evidence at the scene of a crime to the presentation of that evidence in a legal context. The last few years have seen significant advances in the subject and the development and application of genetics has revolutionised forensic science. This book begins with the key concepts needed to fully appreciate the subject and moves on to examine the latest developments in the field, illustrated throughout with references to relevant casework. In addition to the technology involved in generating a DNA profile, the underlying population biology and statistical interpretation are also covered. The evaluation and presentation of DNA evidence in court is discussed as well with guidance on the evaluation process and how court reports and statements should be presented. An accessible introduction to Forensic Genetics from the collection of evidence to the presentation of that evidence in a legal context Includes case studies to enhance student understanding Includes the latest developments in the field focusing on the technology used today and that which is likely to be used in the future Accessible treatment of population biology and statistics associated with forensic evidence This book offers undergraduate students of Forensic Science an accessible approach to the subject that will

have direct relevance to their courses. An Introduction to Forensic Genetics is also an invaluable resource for postgraduates and practising forensic scientists looking for a good introduction to the field.

Providing essential reading for medical, veterinary and biological science students, and students of physiology and trainees in obstetrics and gynaecology, the seventh edition of Essential Reproduction offers an up-to-date account of the fundamentals of reproduction within the context of cutting-edge knowledge and examples of its application. It provides a multidisciplinary approach integrating physiology, genetics, behaviour, anatomy and clinical science, to give thorough coverage of the study of mammalian reproduction. Essential Reproduction is now accompanied by the Wiley E-Text: Powered by VitalSource, and includes: The latest on conceptual, informational and applied aspects of reproduction A new structure offering a more logical approach to study and revision Expanded further reading suggestions to support research A companion website at www.essentialreproduction.com features all of the images from the book to download – perfect for instructor and student support. This title is also available as a mobile App from MedHand Mobile Libraries. Buy it now from Google Play or the MedHand Store.

Become an efficient data science practitioner by understanding Python's key concepts About This Book Quickly get familiar with data science using Python 3.5 Save time (and effort) with all the essential tools explained Create effective data science projects and avoid common pitfalls with the help of examples and hints dictated by experience Who This Book Is For If you are an aspiring data scientist and you have at least a working knowledge of data analysis and Python, this book will get you started in data science. Data analysts with experience of R or MATLAB will also find the book to be a comprehensive reference to enhance their data manipulation and machine learning skills. What You Will Learn Set up your data science toolbox using a Python scientific environment on Windows, Mac, and Linux Get data ready for your data science project Manipulate, fix, and explore data in order to solve data science problems Set up an experimental pipeline to test your data science hypotheses Choose the most effective and scalable learning algorithm for your data science tasks Optimize your machine learning models to get the best performance Explore and cluster graphs, taking advantage of interconnections and links in your data In Detail Fully expanded and upgraded, the second edition of Python Data Science Essentials takes you through all you need to know to succeed in data science using Python. Get modern insight into the core of Python data, including the latest versions of Jupyter notebooks, NumPy, pandas and scikit-learn. Look beyond the fundamentals with beautiful data visualizations with Seaborn and ggplot, web development with Bottle, and even the new frontiers of deep learning with Theano and TensorFlow. Dive into building your essential Python 3.5 data science toolbox, using a single-source approach that will allow to to work with Python 2.7 as well. Get to grips fast with data munging and preprocessing, and all the techniques you need to load, analyse, and process your data. Finally, get a complete overview of principal machine learning algorithms, graph analysis techniques, and all the visualization and deployment instruments that make it easier to present your results to an audience of both data science experts and business users. Style and approach The book is structured as a data science project. You will always benefit from clear code and simplified examples to help you understand the underlying mechanics and real-world datasets.

Grounded in the constructivist inquiry approach to science teaching and learning, Essentials of Science Classroom Assessment bridges science assessment research and practice, and connects science assessment and learning. This book will help students in science methods courses to develop essential skills in conducting science assessment to support student learning. The chapters parallel a typical structure of a science methods course, making the integration of this text into a science methods course seamless. Due to its practical and concise nature, this book is also ideal for practicing science teachers to use as a professional development resource.

First developed as an accessible abridgement of the successful Handbook of Stem Cells, Essentials of Stem Cell Biology serves the needs of the evolving population of scientists, researchers, practitioners and students that are embracing the latest advances in stem cells.

Representing the combined effort of seven editors and more than 200 scholars and scientists whose pioneering work has defined our understanding of stem cells, this book combines the prerequisites for a general understanding of adult and embryonic stem cells with a presentation by the world's experts of the latest research information about specific organ systems. From basic biology/mechanisms, early development, ectoderm, mesoderm, endoderm, methods to application of stem cells to specific human diseases, regulation and ethics, and patient perspectives, no topic in the field of stem cells is left uncovered. Selected for inclusion in Doody's Core Titles 2013, an essential collection development tool for health sciences libraries Contributions by Nobel Laureates and leading international investigators Includes two entirely new chapters devoted exclusively to induced pluripotent stem (iPS) cells written by the scientists who made the breakthrough Edited by a world-renowned author and researcher to present a complete story of stem cells in research, in application, and as the subject of political debate Presented in full color with glossary, highlighted terms, and bibliographic entries replacing references

Science Teaching Essentials: Short Guides to Good Practice serves as a reference manual for science faculty as they set up a new course, consider how to teach the course, figure out how to assess their students fairly and efficiently, and review and revise course materials. This book consists of a series of short chapters that instructors can use as resources to address common teaching problems and adopt evidence-based pedagogies. By providing individual chapters that can be used independently as needed, this book provides faculty with a just-in-time teaching resource they can use to draft a new syllabus. This is a must-have resource for science, health science and engineering faculty, as well as graduate students and post-docs preparing for future faculty careers. Provides easily digested, practical, research-based information on how to teach Allows faculty to efficiently get up-to-speed on a given pedagogy or assessment method Addresses the full range of faculty experiences as they being to teach for the first time or want to reinvent how they teach

An introduction to applying predicate logic to testing and verification of software and digital circuits that focuses on applications rather than theory. Computer scientists use logic for testing and verification of software and digital circuits, but many computer science students study logic only in the context of traditional mathematics, encountering the subject in a few lectures and a handful of problem sets in a discrete math course. This book offers a more substantive and rigorous approach to logic that focuses on applications in computer science. Topics covered include predicate logic, equation-based software, automated testing and theorem proving, and large-scale computation. Formalism is emphasized, and the book employs three formal notations: traditional algebraic formulas of propositional and predicate logic; digital circuit diagrams; and the widely used partially automated theorem prover, ACL2, which provides an accessible introduction to mechanized formalism. For readers who want to see formalization in action, the text presents examples using Proof Pad, a lightweight ACL2 environment. Readers will not become ALC2 experts, but will learn how mechanized logic can benefit software and hardware engineers. In addition, 180 exercises, some of them extremely challenging, offer opportunities for problem solving. There are no prerequisites beyond high school algebra. Programming experience is not required to understand the book's equation-based approach. The book can be used in undergraduate courses in logic for computer science and introduction to computer science and in math courses for computer science students.

The study of Management Science, or Operations Research, looks at how mathematically-based models are used to generate optimal solutions for business problems. This text provides a brief introduction to these models and gives a concise and balanced view of the most widely used applications. The book shows how managers can use scientific ideas and methods to solve business problems, describing a range of examples in everyday use. Giving students plenty of practice and worked examples of a range of quantitative techniques, the text avoids formal proofs and derivations, concentrating instead on applications in a business context. Where software can assist managers in decision-making, Excel is the package that is most regularly used and therefore examples are given in this format.

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