

Section Unifying Themes Of Biology 1 2 Study Guide

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Biological Control George E. Heimpel 2017-04-03 Biological control is the suppression of populations of pests and weeds by living organisms. These organisms can provide important protection from invasive species and protect our environment by reducing the need for pesticides. However, they also pose possible environmental risks, so biological control interventions must be undertaken with great care. This book enhances our understanding of biological control interactions by combining theory and practical application. Using a combination of historical analyses, theoretical models and case studies, with explicit links to invasion biology, the authors cover biological control of insects, weeds, plant pathogens and vertebrate animals. The book reflects increasing recognition of risks over the past 20 years, and incorporates the latest technological advances and theoretical developments. It is ideal for researchers and students of biological control and invasion biology.

The Voyage of the Beagle Charles Darwin 1909 This is Charles Darwin's chronicle of his five-year journey, beginning in 1831, around the world as a naturalist on the H.M.S. Beagle.

Concepts of Biology Samantha Fowler 2018-01-07 Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand. We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

Evolution, Creationism, and the Battle to Control America's Classrooms Michael Berkman 2010-09-20 Who should decide what children are taught in school? This question lies at the heart of the evolution-creation wars that have become a regular feature of the US political landscape. Ever since the 1925 Scopes 'monkey trial' many have argued that the people should decide by majority rule and through political institutions; others variously point to the federal courts, educational experts, or scientists as the ideal arbiter. Berkman and Plutzer illuminate who really controls the nation's classrooms. Based on their innovative survey of 926 high school biology teachers they show that the real power lies with individual educators who make critical decisions in their own classrooms. Broad teacher discretion sometimes leads to excellent instruction in evolution. But the authors also find evidence of strong creationist tendencies in America's public high schools. More generally, they find evidence of a systematic undermining of science and the scientific method in many classrooms.

Biology Sandra Alters 2000-01 Designed for a one or two semester non-majors course in introductory biology taught at most two and four-year colleges. This course typically fulfills a general education requirement, and rather than emphasizing mastery of technical topics, it focuses on the understanding of biological ideas and concepts, how they relate to real life, and appreciating the scientific methods and thought processes. Given the authors' work in and dedication to science education, this text's writing style, pedagogy, and integrated support package are all based on classroom-tested teaching strategies and learning theory. The result is a learning program that enhances the effectiveness & efficiency of the teaching and learning experience in the introductory biology course like no other before it.

Evolution Driven by Organismal Behavior Rui Diogo 2017-03-08 This book proposes a new way to think about evolution. The author carefully brings together evidence from diverse fields of science. In the process, he bridges the gaps between many different--and usually seen as conflicting--ideas to present one integrative theory named ONCE, which stands for Organic Nonoptimal Constrained Evolution. The author argues that evolution is mainly driven by the behavioral choices and persistence of organisms themselves, in a process in which Darwinian natural selection is mainly a secondary--but still crucial--evolutionary player. Within ONCE, evolution is therefore generally made of mistakes and mismatches and trial-and-error situations, and is not a process where organisms engage in an incessant, suffocating struggle in which they can't thrive if they are not optimally adapted to their habitats and the external environment. Therefore, this unifying view incorporates a more comprehensive view of the diversity and complexity of life by stressing that organisms are not merely passive evolutionary players under the rule of external factors. This insightful and well-reasoned argument is based on numerous fascinating case studies from a wide range of organisms, including bacteria, plants, insects and diverse examples from the evolution of our own species. The book has an appeal to researchers, students, teachers, and those with an interest in the history and philosophy of science, as well as to the broader public, as it brings life back into biology by emphasizing that organisms, including humans, are the key active players in evolution and thus in the future of life on this wonderful planet.

Cell Biology by the Numbers Ron Milo 2015-12-07 A Top 25 CHOICE 2016 Title, and recipient of the CHOICE Outstanding Academic Title (OAT) Award. How much energy is released in ATP hydrolysis? How many mRNAs are in a cell? How genetically similar are two random people? What is faster, transcription or translation? Cell Biology by the Numbers explores these questions and dozens of others provided.

Affirmative Action for All Our Children Alain F. Corcos 2016 American public schools are in deep trouble. They are still characterized by ethnic and class segregation, grossly unequal teaching and learning facilities, and governed by mammoth bureaucracies with a plethora of contradictory policies and goals. For many low and medium income students, college is still not an option due to high tuition rates and poor primary school education. Is there any hope?

Affirmative Action for All Our Children: And Why College Education Should Be Free tackles the hard truth and comes up with a compelling answer to solve all of these problems: the Federal Government should completely take over the education system. According to author Alain Corcos, such a takeover needs to include the federal government financing the entire education system from preschool to college, training teachers and paying their salaries, building and maintaining school facilities, developing the best curriculum to prepare all children to face today's world, and providing tuition-free college for students willing to give back by serving their nation in some capacity for two years between the ages of eighteen and twenty. Affirmative Action for All Our Children: And Why College Education Should Be Free lays out a detailed plan that paves the way for US public schools to become the best in the world. However, time is of the essence because any change will take at least two generations to affect the nation.

Handbook of Research on Science Education Norman G. Lederman 2014-07-11 Building on the foundation set in Volume I—a landmark synthesis of research in the field—Volume II is a comprehensive, state-of-the-art new volume highlighting new and emerging research perspectives. The contributors, all experts in their research areas, represent the international and gender diversity in the science education research community. The volume is organized around six themes: theory and methods of science education research; science learning; culture, gender, and society and science learning; science teaching; curriculum and assessment in science; science teacher education. Each chapter presents an integrative review of the research on the topic it addresses—pulling together the existing research, working to understand the historical trends and patterns in that body of scholarship, describing how the issue is conceptualized within the literature, how methods and theories have shaped the outcomes of the research, and where the strengths, weaknesses, and gaps are in the literature. Providing guidance to science education faculty and graduate students and leading to new insights and directions for future research, the Handbook of Research on Science Education, Volume II is an essential resource for the entire science education community.

Curriculum and Teaching Dialogue David J. Flinders 2014-08-01 Curriculum and Teaching Dialogue (CTD) is a publication of the American Association of Teaching and Curriculum (AATC), a national learned society for the scholarly fields of teaching and curriculum. The fields includes those working on the theory, design and evaluation of educational programs at large. University faculty members identified with this field are typically affiliated with the departments of curriculum and instruction, teacher education, educational foundations, elementary education, secondary education, and higher education. CTD promotes all analytical and interpretive approaches that are appropriate for the scholarly study of teaching and curriculum. In fulfillment of this mission, CTD addresses a range of issues across the broad fields of educational research and policy for all grade levels and types of educational programs.

Teaching About Evolution and the Nature of Science National Academy of Sciences 1998-05-06 Today many school students are shielded from one of the most important concepts in modern science: evolution. In engaging and conversational style, Teaching About Evolution and the Nature of Science provides a well-structured framework for understanding and teaching evolution. Written for teachers, parents, and community officials as well as scientists and educators, this book describes how evolution reveals both the great diversity and similarity among the Earth's organisms; it explores how scientists approach the question of evolution; and it illustrates the nature of science as a way of knowing about the natural world. In addition, the book provides answers to frequently asked questions to help readers understand many of the issues and misconceptions about evolution. The book includes sample activities for teaching about evolution and the nature of science. For example, the book includes activities that investigate fossil footprints and population growth that teachers of science can use to introduce principles of evolution. Background information, materials, and step-by-step presentations are provided for each activity. In addition, this volume: Presents the evidence for evolution, including how evolution can be observed today. Explains the nature of science through a variety of examples. Describes how science differs from other human endeavors and why evolution is one of the best avenues for helping students understand this distinction. Answers frequently asked questions about evolution. Teaching About Evolution and the Nature of Science builds on the 1996 National Science Education Standards released by the National Research Council--and offers detailed guidance on how to evaluate and choose instructional materials that support the standards. Comprehensive and practical, this book brings one of today's educational challenges into focus in a balanced and reasoned discussion. It will be of special interest to teachers of science, school administrators, and interested members of the community.

Understanding Biology

Shaping the Future National Research Council 1989-02-01 This book brings the concerned individual up-to-date on the breakthroughs and social questions emerging from biology today. Author Steve Olson draws on the latest research in a number of fields as well as the views of leading biologists, ethicists, and philosophers. He tells the story of the intricate, often frustrating, path scientists must follow to find out why we are the way we are. The volume highlights groundbreaking research being done in four of biology's most exciting fields: genetics, development, neurobiology, and evolution. In each field, the implications of this research extend far beyond basic biology, ranging from human gene therapy to cancer, from neural transplantation to the evolution of the atmosphere.

Biology Eldra Solomon 2014-01-01 Solomon/Martin/Martin/Berg, BIOLOGY is often described as the best majors text for LEARNING biology. Working like a built-in study guide, the superbly integrated, inquiry-based learning system guides you through every chapter. Key concepts appear clearly at the beginning of each chapter and learning objectives start each section. You can quickly check the key points at the end of each section before moving on to the next one. At the end of the chapter a specially focused summary provides further reinforcement of the learning objectives and you are given the opportunity to test your understanding of the material. The tenth edition offers expanded integration of the text's five guiding themes of biology (the evolution of life, the transmission of biological information, the flow of energy through living systems, interactions among biological systems, and the inter-relationship of structure and function). Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The Handbook of Communication Science and Biology Kory Floyd 2020-05-07 The Handbook of Communication Science and Biology charts the state of the art in the field, describing relevant areas of communication studies where a biological approach has been successfully applied. The book synthesizes theoretical and empirical development in this area thus far and proposes a roadmap for future research. As the biological approach to understanding communication has grown, one challenge has been the separate evolution of research focused on media use and effects and research focused on interpersonal and organizational communication, often with little intellectual conversation between the two areas. The Handbook of Communication Science and Biology is the only book to bridge the gap between media studies and human communication, spurring new work in both areas of focus. With contributions from the field's foremost scholars around the globe, this unique book serves as a seminal resource for the training of the current and next generation of communication scientists, and will be of particular interest to media and psychology scholars as well.

The Sourcebook for Teaching Science, Grades 6-12 Norman Herr 2008-08-11 A resource for middle and high school teachers offers activities, lesson plans, experiments, demonstrations, and games for teaching physics, chemistry, biology, and the earth and space sciences.

Modern Biology Albert Towle 1991

Biology for AP® Courses Julianne Zedalis 2017-10-16 Biology for AP® courses covers the scope and sequence requirements of a typical two-semester Advanced Placement® biology course. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology for AP® Courses was designed to meet and exceed the requirements of the College Board's AP® Biology framework while allowing significant flexibility for instructors. Each section of the book includes an introduction based on the AP® curriculum and includes rich features that engage students in scientific practice and AP® test preparation; it also highlights careers and research opportunities in biological sciences.

Levels of Organization in the Biological Sciences Daniel S. Brooks 2021-08-24 Scientific philosophers examine the nature and significance of levels of organization, a core structural principle in the biological sciences. This volume examines the idea of levels of organization as a distinct object of investigation, considering its merits as a core organizational principle for the scientific image of the natural world. It approaches levels of organization--roughly, the idea that the natural world is segregated into part-whole relationships of increasing spatiotemporal scale and complexity--in terms of its roles in scientific reasoning as a dynamic, open-ended idea capable of performing multiple overlapping functions in distinct empirical settings. The contributors--scientific philosophers with longstanding ties to the biological sciences--discuss topics including the philosophical and scientific contexts for an inquiry into levels; whether the concept can actually deliver on its organizational promises; the role of levels in the development and evolution of complex systems; conditional independence and downward causation; and the extension of the concept into the sociocultural realm. Taken together, the contributions embrace the diverse usages of the term as aspects of the big picture of levels of organization. Contributors Jan Baedke, Robert W. Batterman, Daniel S. Brooks, James DiFrisco, Markus I. Eronen, Carl Gillett, Sara Green, James Griesemer, Alan C. Love, Angela Potochnik, Thomas Reydon, Ilya Tëmkin, Jon Umerez, William C. Wimsatt, James Woodward

Unifying Themes in Complex Systems Ali A. Minai 2010-06-02 In recent years, scientists have applied the principles of complex systems science to increasingly diverse fields. The results have been nothing short of remarkable: their novel approaches have provided answers to long-standing questions in biology, ecology, physics, engineering, computer science, economics, psychology and sociology. "Unifying Themes in Complex Systems" is a well established series of carefully edited conference proceedings that serve the purpose of documenting and archiving the progress of cross-fertilization in this field. About NECSI: For over 10 years, The New England Complex Systems Institute (NECSI) has been instrumental in the development of complex systems science and its applications. NECSI conducts research, education, knowledge dissemination, and community development around the world for the promotion of the study of complex systems and its application for the betterment of society. NECSI hosts the International Conference on Complex Systems and publishes the NECSI Book Series in conjunction with Springer Publishers.

Education and Sustainability Daniella Tilbury 2002 A publication from IUCN s Commission on Education and Communication (CEC), this book tells the stories of people who work with communities to motivate them to create a more sustainable future. The accounts range from engaging communities through theatre to a revival of indigenous stories to pass on good environmental practice. The publication was produced both to share what educators around the world have learnt and to give them a platform to tell their stories."

Biological Principles with Human Perspectives Gideon E. Nelson 1984

A Framework for K-12 Science Education National Research Council 2012-02-28 Science, engineering, and technology permeate nearly every facet of modern life and hold the key to solving many of humanity's most pressing current and future challenges. The United States' position in the global economy is declining, in part because U.S. workers lack fundamental knowledge in these fields. To address the critical issues of U.S. competitiveness and to better prepare the workforce, A Framework for K-12 Science Education proposes a new approach to K-12 science education that will capture students' interest and provide them with the necessary foundational knowledge in the field. A Framework for K-12 Science Education outlines a broad set of expectations for students in science and engineering in grades K-12. These expectations will inform the development of new standards for K-12 science education and, subsequently, revisions to curriculum, instruction, assessment, and professional development for educators. This book identifies three dimensions that convey the core ideas and practices around which science and engineering education in these grades should be built. These three dimensions are: crosscutting concepts that unify the study of science through their common application across science and engineering; scientific and engineering practices; and disciplinary core ideas in the physical sciences, life sciences, and earth and space sciences and for engineering, technology, and the applications of science. The overarching goal is for all high school graduates to have sufficient knowledge of science and engineering to engage in public discussions on science-related issues, be careful consumers of scientific and technical information, and enter the careers of their choice. A Framework for K-12 Science Education is the first step in a process that can inform state-level decisions and achieve a research-grounded basis for improving science instruction and learning across the country. The book will guide standards developers, teachers, curriculum designers, assessment developers, state and district science administrators, and educators who teach science in informal environments.

What Is Life? A Guide to Biology W/Prep-U Jay Phelan 2009-04-30 Jay Phelan's What is Life? A Guide to Biology is written in a delightfully readable style that communicates complex ideas to non-biology majors in a clear and approachable manner. After reading Phelan's book, students will understand why they would want to know and talk about science. His skillful style includes asking stimulating questions (called Q questions) which encourage the student to keep reading to find the answer and will illuminate just how relevant science is to their life.

Unifying Themes in Complex Systems Ali A. Minai 2007-08-06 In recent years, scientists have applied the principles of complex systems science to increasingly diverse fields. The results have been nothing short of remarkable. The Third International Conference on Complex Systems attracted over 400 researchers from around the world. The conference aimed to encourage cross-fertilization between the many disciplines represented and to deepen our understanding of the properties common to all complex systems.

A New Biology for the 21st Century National Research Council 2009-11-20 Now more than ever, biology has the potential to contribute practical solutions to many of the major challenges confronting the United States and the world. A New Biology for the 21st Century recommends that a "New Biology" approach--one that depends on greater integration within biology, and closer collaboration with physical, computational, and earth scientists, mathematicians and engineers--be used to find solutions to four key societal needs: sustainable food production, ecosystem restoration, optimized biofuel production, and improvement in human health. The approach calls for a coordinated effort to leverage resources across the federal, private, and academic sectors to help meet challenges and improve the return on life science research in general.

Transforming the Workforce for Children Birth Through Age 8 National Research Council 2015-07-23 Children are already learning at birth, and they develop and learn at a rapid pace in their early years. This provides a critical foundation for lifelong progress, and the adults who provide for the care and the education of young children bear a great responsibility for their health, development, and learning. Despite the fact that they share the same objective - to nurture young children and secure their future success - the various practitioners who contribute to the care and the education of children from birth through age 8 are not acknowledged as a workforce unified by the common knowledge and competencies needed to do their jobs well. Transforming the Workforce for Children Birth Through Age 8 explores the science of child development, particularly looking at implications for the professionals who work with children. This report examines the current capacities and practices of the workforce, the settings in which they work, the policies and infrastructure that set qualifications and provide professional learning, and the government agencies and other funders who support and oversee these systems. This book then makes recommendations to improve the quality of professional practice and the practice environment for care and education professionals. These detailed recommendations create a blueprint for action that builds on a unifying foundation of child development and early learning, shared knowledge and competencies for care and education professionals, and principles for effective professional learning. Young children thrive and learn best when they have secure, positive relationships with adults who are knowledgeable about how to support their development and learning and are responsive to their individual progress. Transforming the Workforce for Children Birth Through Age 8 offers guidance on system changes to improve the quality of professional practice, specific actions to improve professional learning systems and workforce development, and research to continue to build the knowledge base in ways that will directly advance and inform future actions. The recommendations of this book provide an opportunity to improve the quality of the care and the education that children receive, and ultimately improve outcomes for children.

Biology Peter H. Raven 2005-01-01 Take a New Look at Raven! "BIOLOGY" is an authoritative majors textbook focusing on evolution as a unifying theme. In revising the text, McGraw-Hill consulted with numerous users, noted experts and professors in the field. "Biology" is distinguished from other texts by its strong emphasis on natural selection and the evolutionary process that explains biodiversity. The new 8th edition continues that tradition and advances into modern biology by featuring the latest in cutting edge content reflective of the rapid advances in biology. That same modern perspective was brought into the completely new art program offering readers a dynamic, realistic, and accurate, visual program. To view a sample chapter, go to www.ravenbiology.com

Unifying Themes in Complex Systems VII Ali A. Minai 2012-12-22 The International Conference on Complex Systems (ICCS) creates a unique atmosphere for scientists of all fields, engineers, physicians, executives, and a host of other professionals to explore common themes and applications of complex system science. With this new volume, Unifying Themes in Complex Systems continues to build common ground between the wide-ranging domains of complex system science.

Biology Neil A. Campbell 2006-04-30

Handbook of Research on Science Education Sandra K. Abell 2013-03-07 This state-of-the-art research Handbook provides a comprehensive, coherent, current synthesis of the empirical and theoretical research concerning teaching and learning in science and lays down a foundation upon which future research can be built. The contributors, all leading experts in their research areas, represent the international and gender diversity that exists in the science education research community. As a whole, the Handbook of Research on Science Education demonstrates that science education is alive and well and illustrates its vitality. It is an essential resource for the entire science education community, including veteran and emerging researchers, university faculty, graduate students, practitioners in the schools, and science education professionals outside of universities. The National Association for Research in Science Teaching (NARST) endorses the Handbook of Research on Science Education as an important and valuable synthesis of the current knowledge in the field of science education by leading individuals in the field. For more information on NARST, please visit: <http://www.narst.org/>.

Science as a Way of Knowing John Alexander Moore 1999 This book makes Moore's wisdom available to students in a lively, richly illustrated account of the history and workings of life. Employing rhetoric strategies including case histories, hypotheses and deductions, and chronological narrative, it provides both a cultural history of biology and an introduction to the procedures and values of science.

Unifying Themes in Complex Systems X Dan Braha 2021-06-14 The International Conference on Complex Systems (ICCS) offers a unique interdisciplinary venue for researchers from the physical and biological sciences, social sciences, psychology and cognitive science, engineering, medicine, human systems, and global systems. This proceedings volume gathers selected papers from the conference. The New England Complex Systems Institute (NECSI) has been instrumental in the development of complex systems science and its applications. NECSI pursues research, education, knowledge dissemination, and community development efforts around the world to promote the study of complex systems and its application for the benefit of society. NECSI hosts the International Conference on Complex Systems and publishes the NECSI Book.

Psychology: Themes and Variations Wayne Weiten 2021-02-02 A fusion of the full-length and briefer versions that preceded it, Weiten's PSYCHOLOGY: THEMES AND VARIATIONS, 11th Edition combines a superb thematic organization with practical applications and examples that help readers see beyond research to big-picture concepts. Often described as challenging yet easy to learn from, the book surveys psychology's broad range of content while illuminating the process of research and its relationship to application, showing both the unity and diversity of psychology's subject matter and helping learners master the basic concepts and principles of psychology with as little struggle as possible. Weiten's themes provide unifying threads across chapters that help readers to see the connections among different research areas in psychology. A dynamic illustration program further enhances these themes. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Biology Ebook Raven 2016-05-16 Biology Ebook

Unifying Themes in Complex Systems IV Ali A. Minai 2008-11-05 In June of 2002, over 500 professors, students and researchers met in Boston, Massachusetts for the Fourth International Conference on Complex Systems. The attendees represented a remarkably diverse collection of fields: biology, ecology, physics, engineering, computer science, economics, psychology and sociology. The goal of the conference was to encourage cross-fertilization between the many disciplines represented and to deepen understanding of the properties common to all complex systems. This volume contains 43 papers selected from the more than 200 presented at the conference. Topics include: cellular automata,

neurology, evolution, computer science, network dynamics, and urban planning. About NECSI: For over 10 years, The New England Complex Systems Institute (NECSI) has been instrumental in the development of complex systems science and its applications. NECSI conducts research, education, knowledge dissemination, and community development around the world for the promotion of the study of complex systems and its application for the betterment of society. NECSI hosts the International Conference on Complex Systems and publishes the NECSI Book Series in conjunction with Springer Publishers. ALI MINAI is an Affiliate of the New England Complex Systems Institute and an Associate Professor in the Department of Electrical and Computer Engineering and Computer Science at the University of Cincinnati. YANEER BAR-YAM is President and founder of the New England Complex Systems Institute. He is the author of Dynamics of Complex Systems and Making Things Work: Solving Complex Problems in a Complex World.

Unifying Themes In Complex Systems, Volume 1 Yaneer Bar-yam 2018-05-04 The study of complex systems has attracted a broad range of researchers from many disciplines spanning both the hard and soft sciences. In the Autumn of 1997, 300 of these researchers came together for the First International Conference on Complex Systems. The proceedings of this conference is the first book in the New England Complex Systems Institute Series on Complexity and includes more than 100 presentations and papers on topics like evolution, emergence, complexity, self-organization, scaling, informatics, time series, emergence of mind, and engineering of complex systems.

Biology Made Simple Rita Mary King 2010-02-10 Take the frustration out of learning the science of life! Biology is the most fundamental science yet it's one of the most complex. Now, Biology Made Simple is here to help science and non-science majors alike understand the science of life. Covering all the major themes of biology—including the cellular basis of life, the interaction of organisms, and the evolutionary process of all beings, Biology Made Simple combines concise explanations with the in-depth coverage needed to understand every aspect of this subject. Topics covered include: unifying themes of biology chemistry for the biologist the living cell DNA evolution genetics animal organization and homeostasis the systems of the body ecology Featuring more than sixty illustrations and at-a-glance chapter reviews, Biology Made Simple will help you master this fascinating science.

The Major Metaphors of Evolution Salvatore J. Agosta 2020-08-29 This book presents a unified evolutionary framework based on three sets of metaphors that will help to consolidate discussions on evolutionary transitions. Evolution is the unifying principle of life, making identifying ways to apply evolutionary principles to tackle existence-threatening crises such as climate change crucial. A more cohesive evolutionary framework will further the discussions in this regard and also accelerate the process itself. This book lays out a framework based on three dualistic classes of metaphors – time, space, and conflict resolution. Evolutionary transitions theory shows how metaphors can help us understand selective diversification, as Darwin described with his “tree of life”. Moreover, the recently proposed Stockholm paradigm demonstrates how metaphors can help shed light on the emergence of complex ecosystems that Darwin highlighted with his “tangled bank” metaphor. Taken together, these ideas offer proactive measures for coping with existential crises for humanity, such as climate change. The book will appeal to biologists, philosophers and historians alike.

EBOOK: Biology Peter Raven 2013-02-16 Committed to Excellence in the Landmark Tenth Edition. This edition continues the evolution of Raven & Johnson's Biology. The author team is committed to continually improving the text, keeping the student and learning foremost. We have integrated new pedagogical features to expand the students' learning process and enhance their experience in the ebook. This latest edition of the text maintains the clear, accessible, and engaging writing style of past editions with the solid framework of pedagogy that highlights an emphasis on evolution and scientific inquiry that have made this a leading textbook for students majoring in biology and have been enhanced in this landmark Tenth edition. This emphasis on the organizing power of evolution is combined with an integration of the importance of cellular, molecular biology and genomics to offer our readers a text that is student friendly and current. Our author team is committed to producing the best possible text for both student and faculty. The lead author, Kenneth Mason, University of Iowa, has taught majors biology at three different major public universities for more than fifteen years. Jonathan Losos, Harvard University, is at the cutting edge of evolutionary biology research, and Susan Singer, Carleton College, has been involved in science education policy issues on a national level. All three authors bring varied instructional and content expertise to the tenth edition of Biology.