

## Animal Physiology And Adaptations 5th

Clinical Biochemistry of Domestic Animals, Second Edition, Volume I, is a major revision of the first edition prompted by the marked expansion of knowledge in the clinical biochemistry of animals. In keeping with this expansion of knowledge, this edition is comprised of two volumes. Chapters on the pancreas, thyroid, and pituitary-adrenal systems have been separated and entirely rewritten. Completely new chapters on muscle metabolism, iron metabolism, blood clotting, and gastrointestinal function have been added. All the chapters of the first edition have been revised with pertinent new information, and many have been completely rewritten. This volume contains 10 chapters and opens with a discussion of carbohydrate metabolism and associated disorders. Separate chapters follow on lipid metabolism, plasma proteins, and porphyrins. Subsequent chapters deal with liver, pancreatic, and thyroid functions; the role of the pituitary and adrenal glands in health and disease; the function of calcium, inorganic phosphorus, and magnesium metabolism in health and disease; and iron metabolism. Sturkie's Avian Physiology is the classic comprehensive single volume on the physiology of domestic as well as wild birds. The Fifth Edition is thoroughly revised and updated, and includes new chapters on the physiology of incubation and growth. Chapters on the nervous system and sensory organs have been greatly expanded due to the many recent advances in the field. The text also covers the physiology of flight, reproduction in both male and female birds, and the immunophysiology of birds. The Fifth Edition, like the earlier editions, is a must for anyone interested in comparative physiology, poultry science, veterinary medicine, and related fields. This volume establishes the standard for those who need the latest and best

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information on the physiology of birds. Thoroughly updated and revised Coverage of both domestic and wild birds New larger format Only comprehensive, single volume devoted to birds

This book examines three ways plants respond to their changing environment. The first example can be found in all plants. Despite the extreme changes in weather, plants have to stay where they are and respond to whatever nature produces. Plants have the capacity to respond quickly and yet they can evolve in a single generation. The second example addresses how an individual leaf has to respond rapidly and repeatedly to maintain the proper balance of carbon dioxide (CO<sub>2</sub>) and water so that it can photosynthesize but not dry out. This delicate balance is governed by a pair of cells that regulate the size of openings on leaves. The final chapter examines a unique example of a leaf that can move fast enough to trap insects and digest them. This book presents data that led to our understanding of how plants function on different time scales.

John Tyler Bonner, one of our most distinguished and creative biologists, here offers a completely new perspective on the role of size in biology. In his hallmark friendly style, he explores the universal impact of being the right size. By examining stories ranging from Alice in Wonderland to Gulliver's Travels, he shows that humans have always been fascinated by things big and small. Why then does size always reside on the fringes of science and never on the center stage? Why do biologists and others ponder size only when studying something else--running speed, life span, or metabolism? Why Size Matters, a pioneering book of big ideas in a compact size, gives size its due by presenting a profound yet lucid overview of what we know about its role in the living world. Bonner argues that size really does matter--that it is

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the supreme and universal determinant of what any organism can be and do. For example, because tiny creatures are subject primarily to forces of cohesion and larger beasts to gravity, a fly can easily walk up a wall, something we humans cannot even begin to imagine doing. Bonner introduces us to size through the giants and dwarfs of human, animal, and plant history and then explores questions including the physics of size as it affects biology, the evolution of size over geological time, and the role of size in the function and longevity of living things. As this elegantly written book shows, size affects life in its every aspect. It is a universal frame from which nothing escapes.

Master the diagnosis and effective treatment of veterinary neurologic disorders! de Lahunta's *Veterinary Neuroanatomy and Clinical Neurology, 5th Edition* provides in-depth coverage of the anatomy, physiology, and pathology of the nervous system. With this knowledge, you will be able to accurately diagnose the location of neurologic lesions in small animals, horses, and food animals. Practical guidelines explain how to perform neurologic examinations, interpret examination results, and formulate treatment plans. Descriptions of neurologic disorders are accompanied by clinical case studies, photos and drawings, and radiographs. Written by neurology experts Alexander de Lahunta, Eric Glass, and Marc Kent, this resource includes hundreds of online videos depicting the patients and disorders described in the text. Logical case description format presents diseases in a manner that is similar to diagnosing and treating neurologic disorders in the clinical setting: 1) Description of the neurologic disorder; 2) Neuroanatomic diagnosis and how it was determined, the differential diagnosis, and any ancillary data; and 3) Course of the disease, the final clinical or necropsy diagnosis, and a brief discussion of the syndrome. More than 380 videos on a companion website hosted by the

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Cornell University College of Veterinary Medicine bring concepts to life and clearly demonstrate the neurologic disorders and examination techniques described in case examples throughout the text. More than 250 high-quality radiographs and over 800 vibrant color photographs and line drawings depict anatomy, physiology, and pathology, including gross and microscopic lesions, and enhance your ability to diagnose challenging neurologic cases. High-quality, state-of-the-art MRI images correlate with stained transverse sections of the brain, showing minute detail that the naked eye alone cannot see. A detailed Video Table of Contents in the front of the book makes it easier to access the videos that correlate to case examples. NEW case descriptions offer additional practice in working your way through real-life scenarios to reach an accurate diagnosis and an effective treatment plan for neurologic disorders. NEW! Content updates reflect the latest evidence-based research. NEW! Clinical photos and illustrations are updated to reflect current practice.

A study of comparative physiology that explains the ways in which specific bodily systems function in different species

This book attempts to dispel the widely held notion that 'primitive' animals are less advanced or less complex than the 'non-primitive'.

The new and updated edition of this accessible text provides a comprehensive overview of the comparative physiology of animals within an environmental context. Includes two brand new chapters on Nerves and Muscles and the Endocrine System. Discusses both comparative systems physiology and environmental physiology. Analyses and integrates problems and adaptations for

each kind of environment: marine, seashore and estuary, freshwater, terrestrial and parasitic. Examines mechanisms and responses beyond physiology. Applies an evolutionary perspective to the analysis of environmental adaptation. Provides modern molecular biology insights into the mechanistic basis of adaptation, and takes the level of analysis beyond the cell to the membrane, enzyme and gene. Incorporates more varied material from a wide range of animal types, with less of a focus purely on terrestrial reptiles, birds and mammals and rather more about the spectacularly successful strategies of invertebrates. A companion site for this book with artwork for downloading is available at:

[www.blackwellpublishing.com/willmer/](http://www.blackwellpublishing.com/willmer/)

New scientific approaches have dramatically evolved in the decade since *The Physiology of Fishes* was first published. With the genomic revolution and a heightened understanding of molecular biology, we now have the tools and the knowledge to apply a fresh approach to the study of fishes. Consequently, *The Physiology of Fishes*, Third Edition is not merely another updating, but rather an entire reworking of the original. To satisfy that need for a fresh approach, the editors have employed a new set of expert contributors steeped in the very latest research; their contemporary perspective pervades the entire text. In addition to new chapters on gas transport, temperature physiology, and stress, as well as

one dedicated to functional genomics, readers will discover that many of these new contributors approach their material with a contemporary molecular perspective. While much of the material is new, the editors have completely adhered to the original's style in creating a text that continues to be highly readable and perpetually insightful in bridging the gap between pure and applied science. The Physiology of Fishes, Third Edition, completely updated with a molecular perspective, continues to be regarded as the best single-volume general reference on all major areas of research in fish physiology. The Physiology of Fishes, Third Edition provides background information for advanced students as well as material of interest to marine and fisheries biologists, ichthyologists, and comparative physiologists looking to differentiate between the physiological strategies unique to fishes, and those shared with other organisms.

Building on their last revision of Roger Eckert's best-selling text, the author team of Randall, Burggren, and French are back and breathing new life into "Animal Physiology." The "Fifth Edition" highlights the latest breakthroughs in the field and offers refreshing new themes, all the while staying true to the enduring strengths that have made the book a longtime market-leader. With this edition more student help has also been included.

This text presents all the branches of modern animal physiology with a strong emphasis on integration among physiological disciplines, ecology, and evolutionary biology.

The book begins by describing in detail the mechanisms of energy exchange – radiative, convective, conductive and evaporative – together with techniques for their determination. The discussion extends to the importance of CO<sub>2</sub>, ozone and methane, together with that of aerosol pollutants and the evolution of atmospheric CO<sub>2</sub>. Subsequent chapters apply the results of the biophysical methods to mammals, birds and aquatic animals. Discussion includes problems of shelter and shade for animals in tropical environments and techniques for the thermal evaluation for shelters and for several tree types. The details of heat exchange between animals and the environment are presented, in separate chapters covering Mammals and Birds and Aquatic Mammals. A chapter on Shade and Shelter describes the importance of shade for animals, factors of shade efficiency, the protections offered by shelter and methods of calculating the protection afforded by both shade and shelter. A Special Methods chapter offers a variety of techniques for evaluating cutaneous and respiratory evaporation, and practical methods for sampling of hairs and the evaluation of hair coat characteristics.

This well-illustrated, authoritative text introduces students to the principles and concepts of physiology that are essential to the study and practice of veterinary medicine. Coverage of physiopathology, in addition to clinical problem-solving techniques, makes this resource uniquely relevant to practice. Clinical correlation boxes in each chapter include history and background information on topics in physiology. Cases present realistic situations that show theory in practice and reinforce students' understanding of each topic. The organization by body system follows a logical progression and makes it easy to refer to specific information. The leading reference for the diagnosis and management of fluid, electrolyte, and acid-base imbalances in small animals, *Fluid, Electrolyte, and Acid-Base Disorders in Small Animal Practice, 4th Edition* provides cutting-edge, evidence-based guidelines to enhance your care of dogs and cats. Information is easy to find and easy to use, with comprehensive coverage including fluid and electrolyte physiology and pathophysiology and their clinical applications, as well as the newest advances in fluid therapy and a discussion of a new class of drugs called vaptans. Lead author Stephen DiBartola is a well-known speaker and the "go-to" expert in this field, and his team of contributors represents the most authoritative and respected clinicians and academicians in veterinary medicine. Over 30 expert contributors represent the "cream of the crop" in small animal medicine,

ensuring that this edition provides the most authoritative and evidence-based guidelines. Scientific, evidence-based insights and advances integrate basic physiological principles into practice, covering patient evaluation, differential diagnosis, normal and abnormal clinical features and laboratory test results, approaches to therapy, technical aspects of therapy, patient monitoring, assessing risk, and prediction of outcomes for each disorder. Hundreds of tables, algorithms, and schematic drawings demonstrate the best approaches to diagnosis and treatment, highlighting the most important points in an easy-access format. Drug and dosage recommendations are included with treatment approaches in the Electrolyte Disorders section. Clear formulas in the Fluid Therapy section make it easier to determine the state of dehydration, fluid choice, and administration rate and volume in both healthy and diseased patients. Updated chapters cover the latest advances in fluid therapy in patient management, helping you understand and manage a wide range of potentially life-threatening metabolic disturbances. Expanded Disorders of Sodium and Water chapter includes information on a new class of drugs called vaptans, vasopressin receptor antagonists that may soon improve the ability to manage patients with chronic hyponatremia. Hundreds of new references cover the most up-to-date advances in fluid therapy, including renal failure and shock

syndromes.

A sound knowledge of anatomy and physiology is an essential basis for the effective clinical treatment of companion animals and farm animals alike. The fourth edition of this bestselling book continues to provide a comprehensive description of the anatomy and physiology of dogs and cats. The book builds on these foundations with detailed descriptions of exotic small species including birds, and domestic farm animals, including cows, sheep and pigs, as well as the horse.

Animal Physiology Adaptation and Environment Cambridge University Press

This Comprehensive, Fully Updated Text Describes The Essential Concepts Of Animal Physiology And Related Biochemistry For Students Of Biology And Related Disciplines. In Terms Of Presentation And Contents, The Book Offers Relevant Fundamentals Of Physiology And Animal Behaviour Under Diverse Conditions. The Text Will Certainly Satisfy The Needs Of Students Of Biology, Home Science And Animal Husbandry. Key Features \* Covers Physiology Of Organ Systems Of Animals, Including Human And Mammalian Physiology. \* Surveys Functional Specialisation Of Organisms And Their Survival Ability Under Environmental Stresses. \* Explains Criteria Of Physiological Variations Among Organisms Living In Diverse Habitats. \* New Coverage On Animal Calorimetry To Explain Energy Requirements Of Animals. \* In Depth Coverage Of Membrane Physiology. \* A New Chapter On Physiological Disorders Emanating From Organellar Malfunctions And Genetic Disabilities.

"Comprehensive, contemporary, and engaging, Animal Physiology provides evolutionary and ecological context to help students make connections across all levels of physiological scale"-- Originally published in 1982, this book was designed to supplement Knut Schmidt-Nielsen's

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Animal Physiology. Using Schmidt-Nielsen's comparative approach to the study of animal form and function, the text pursues in greater detail topics introduced in Animal Physiology. Like the textbook, the Companion is organised according to major environmental features: oxygen, food and energy, temperature, and water, concluding with a section on movement and structure. The papers brought together in this volume were presented in July 1980 to honour Schmidt-Nielsen's sixty-fifth birthday, at the Fifth International Conference on Comparative Physiology, held in Sandbjerg, Denmark.

A sound knowledge of anatomy and physiology is an essential basis for the effective clinical treatment of companion animals. The new Introduction to Veterinary Anatomy and Physiology Textbook builds on the success of the first edition in its thorough coverage of the common companion animal species. Updated throughout, the new edition features online learning resources, providing students with the opportunity to test their knowledge with questions and visual exercises, while instructors can download questions, figures and exercises to use as teaching aids. An essential first purchase for all those embarking upon a veterinary career Now with on-line resources including self-assessment tools and teaching aids Comprehensive coverage of all major companion animal species New equine chapter 'Applied Anatomy' tips relate theory to clinical practice, showing the relationship between anatomy and physiology and the disease process

Now in its Fifth Edition, Functional Anatomy and Physiology of Domestic Animals provides a basic understanding of domestic animal anatomy and physiology, taking an interconnected approach to structure and function of the horse, dog, cat, cow, sheep, goat, pig, and chicken. Offers a readable introduction to basic knowledge in domestic animal anatomy and physiology

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Covers equine, canine, feline, bovine, ovine, ruminant, swine, and poultry anatomy and physiology Considers structure and function in relation to each other for a full understanding of the relationship between the two Provides pedagogical tools to promote learning, including chapter outlines, study questions, self-evaluation exercises, clinical correlates, key terms, suggested readings, and a robust art program Includes access to a companion website with video clips, review questions, and the figures from the book in PowerPoint

New edition of the acclaimed and stimulating textbook, with fully revised text, references and illustrations.

For B.Sc., B.Sc.(Hons.) and M.Sc. Classes of All Indian Universities

Clinical Laboratory Animal Medicine: An Introduction, Fourth Edition offers a user-friendly guide to the unique anatomy and physiology, care, common diseases, and treatment of small mammals and nonhuman primates. Carefully designed for ease of use, the book includes tip boxes, images, and review questions to aid in comprehension and learning. The Fourth Edition adds new information on transgenic mice, drug dosages, techniques, and environmental enrichment, making the book a comprehensive working manual for the care and maintenance of common laboratory animals. The book includes information on topics ranging from genetics and behavior to husbandry and techniques in mice, rats, gerbils, hamsters, guinea pigs, chinchillas, rabbits, ferrets, and nonhuman primates. A companion website provides editable review questions and answers, instructional PowerPoints, and additional images not found in the book. Clinical Laboratory Animal Medicine is an invaluable resource for practicing

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veterinarians, veterinary students, veterinary technicians, and research scientists. Known for its clear presentation style, single-author voice, and focus on content most relevant to clinical and pre-clinical students, Guyton and Hall Textbook of Medical Physiology, 14th Edition, employs a distinctive format to ensure maximum learning and retention of complex concepts. A larger font size emphasizes core information, while supporting information, including clinical examples, are detailed in smaller font and highlighted in pale blue – making it easy to quickly skim the essential text or pursue more in-depth study. This two-tone approach, along with other outstanding features, makes this bestselling text a favorite of students worldwide. Offers a clinically oriented perspective written with the clinical and preclinical student in mind, bridging basic physiology with pathophysiology. Focuses on core material and how the body maintains homeostasis to remain healthy, emphasizing the important principles that will aid in later clinical decision making. Presents information in short chapters using a concise, readable voice that facilitates learning and retention. Contains more than 1,200 full-color drawings and diagrams – all carefully crafted to make physiology easier to understand. Features expanded clinical coverage including obesity, metabolic and cardiovascular disorders, Alzheimer’s disease, and other degenerative diseases. Includes online access to interactive figures, new audio of heart sounds, animations, self-assessment questions, and more. Evolve Instructor site with an image and test bank is available to instructors through their Elsevier sales rep or via request at

<https://evolve.elsevier.com>.

Ask anyone who has owned a pet and they'll assure you that, yes, animals have personalities. And science is beginning to agree. Researchers have demonstrated that both domesticated and nondomesticated animals—from invertebrates to monkeys and apes—behave in consistently different ways, meeting the criteria for what many define as personality. But why the differences, and how are personalities shaped by genes and environment? How did they evolve? The essays in *Animal Personalities* reveal that there is much to learn from our furred and feathered friends. The study of animal personality is one of the fastest-growing areas of research in behavioral and evolutionary biology. Here Claudio Carere and Dario Maestripieri, along with a host of scholars from fields as diverse as ecology, genetics, endocrinology, neuroscience, and psychology, provide a comprehensive overview of the current research on animal personality. Grouped into thematic sections, chapters approach the topic with empirical and theoretical material and show that to fully understand why personality exists, we must consider the evolutionary processes that give rise to personality, the ecological correlates of personality differences, and the physiological mechanisms underlying personality variation.

*Animal Physiology*, Fourth Edition presents all the branches of modern animal physiology with a strong emphasis on integration of physiological knowledge, ecology, and evolutionary biology.

This classic animal physiology text focuses on comparative examples that illustrate the general principles of physiology at all levels of organisation—from molecular mechanisms to regulated physiological systems to whole organisms in their environment. This textbook is an authoritative and complete guide to the field of animal physiology which uses a threefold approach to teaching. The Comparative Approach emphasises basic mechanisms but allows patterns of physiological function in different species to demonstrate how evolution creates diversity. This approach encourages students to appreciate the underlying principles that govern physiological systems. The Experimental Emphasis helps students to understand the process of scientific discovery and shows how our knowledge of physiology continually increases and finally the Integrative Approach presents information about specific physiological systems at all levels of organisation, from molecular interactions to interactions between an organism and its environment.

Vertebrate Endocrinology represents more than just a treatment of the endocrine system—it integrates hormones with other chemical bioregulatory agents not classically included with the endocrine system. It provides a complete overview of the endocrine system of vertebrates by first emphasizing the mammalian system as the basis of most terminology and understanding of endocrine mechanisms and then applies that to non-mammals. The serious reader will gain both an understanding of the intricate relationships among all of the body systems and their regulation by hormones and other

bioregulators, but also a sense of their development through evolutionary time as well as the roles of hormones at different stages of an animal's life cycle. Includes new full color format includes over 450 full color, completely redrawn image Features a companion web site hosting all images from the book as PPT slides and .jpeg files Presents completely updated and revitalized content with new chapters, such as Endocrine Disrupters and Behavioral Endocrinology Offers new clinical correlation vignettes throughout

Mammals are the so-called "pinnacle" group of vertebrates, successfully colonising virtually all terrestrial environments as well as the air (bats) and sea (especially pinnipeds and cetaceans). How mammals function and survive in these diverse environments has long fascinated mammalogists, comparative physiologists and ecologists. Ecological and Environmental Physiology of Mammals explores the physiological mechanisms and evolutionary necessities that have made the spectacular adaptation of mammals possible. It summarises our current knowledge of the complex and sophisticated physiological approaches that mammals have for survival in a wide variety of ecological and environmental contexts: terrestrial, aerial, and aquatic. The authors have a strong comparative and quantitative focus in their broad approach to exploring mammal ecophysiology. As with other books in the Ecological and Environmental Physiology Series, the emphasis is on the unique physiological characteristics of mammals, their adaptations to extreme environments, and current

experimental techniques and future research directions are also considered. This accessible text is suitable for graduate level students and researchers in the fields of mammalian comparative physiology and physiological ecology, including specialist courses in mammal ecology. It will also be of value and use to the many professional mammalogists requiring a concise overview of the topic.

Promoting a conceptual understanding and taking an integrative systems approach, ANIMAL PHYSIOLOGY 2E illustrates the individual organization as well as the collective interdependence of each complete physiological system. The text begins with chapters on integrative principles and on the genomic, molecular, and cellular basis of physiology, then proceeds to chapters on individual organ systems. For each organ system, evolutionary forces as well as current cellular and molecular research are discussed. To clearly illustrate system interdependence, each systems chapter contains a summary, titled Making Connections. To make the text even more accessible to students, the authors also incorporate a comparative approach to animal physiology, examining the basic physiology of many vertebrate and nonvertebrate animals as well as their primary diseases and ability to respond to environmental changes. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Animal Physiology is the essential core text for all those studying physiology or zoology. The advances that have taken place in the field of physiology during the last four to five

decades are spectacular. The field of animal physiology extends the tools and methods of human physiology to non-human animal species. Plant physiology also borrows techniques from both fields. Its scope of subjects is at least as diverse as the tree of life itself. Due to this diversity of subjects, research in animal physiology tends to concentrate on understanding how physiological traits changed throughout the evolutionary history of animals. Biochemistry, sometimes called biological chemistry, is the study of chemical processes within and relating to living organisms. By controlling information flow through biochemical signaling and the flow of chemical energy through metabolism, biochemical processes give rise to the complexity of life. Over the last decades of the 20th century, biochemistry has become so successful at explaining living processes that now almost all areas of the life sciences from botany to medicine to genetics are engaged in biochemical research. Animal Biochemistry is a sub branch. Biochemistry is the study of the chemical processes of living organisms and it deals with the function and structure of cellular components such as lipids carbohydrates proteins nucleic acids and other biomolecules. This valuable book illustrates the individual organization as well as the collective interdependence of each complete physiological system. This book provides the rich information resources needed to the students who seek their career in animal health and sciences.

El libro ayuda a conocer las funciones normales del cuerpo, esenciales para una práctica veterinaria satisfactoria, y los mecanismos de las enfermedades. Aborda esta

amplia especialidad de una forma práctica y asequible, que ayuda a comprender el modo en el que los conceptos clave de la fisiología se relacionan con la práctica clínica. La presente edición incorpora nuevos colaboradores que aportan sus perspectivas y experiencias personales, incluye cuadros de casos clínicos con ejemplos de cómo aplicar los principios y conceptos fisiológicos al diagnóstico y el tratamiento de los pacientes veterinarios. Asimismo, las preguntas prácticas al final de cada capítulo evalúan la comprensión de lo que se ha leído y son un método útil para repasar con vistas a los exámenes. Cuenta con contenido online en inglés accesible a través de Evolve como las animaciones que se han actualizado, destacando la información útil y fomentando el aprendizaje con la presentación visual de funciones y enfermedades.

The new edition of *Introduction to Wildlife and Fisheries* marks the return of first and only book to integrate both the wildlife and fisheries into a single textbook at the introductory level. Thoroughly updated, with an inviting new design, the Second Edition offers the most current and accessible coverage of essential biological concepts and their applications, principles of resource management and conservation, and contemporary and public policy issues affecting today's scientists and resources.

Learn how to understand normal body functions before learning about the mechanisms of veterinary disease. *Cunningham's Textbook of Veterinary Physiology*, 6th Edition approaches this vast subject in a practical, user-friendly way that helps you grasp key concepts and learn how they relate to clinical practice. From cell physiology to body

system function to homeostasis and immune function, this comprehensive text provides the solid foundation needed before advancing in the veterinary curriculum. Expanded resources on the companion Evolve website include state-of-the-art 3D animations, practice tests, a glossary, and Clinical Correlations. Clinical Correlations boxes present case studies that illustrate how to apply physiology principles and concepts to the diagnosis and treatment of veterinary patients. Practice questions at the end of each chapter test your understanding of what you've just read and provide valuable review for exams. Key Points at the beginning of each chapter introduce new concepts and help you prepare for exams. Full-color format highlights helpful information and enhances learning with a wealth of illustrations that visually depict specific functions and conditions. NEW! Updated animations added that are relevant to content. NEW! New contributors lend their unique perspective and expertise to the content.

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