

Feynmans Tips On Physics Reflections Advice Insights Practice A Problem Solving Supplement To The Feynman Lectures On Physics

Block by Block: The Historical and Theoretical Foundations of Thermodynamics
How to Solve Problems
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Mr Tompkins in Paperback

Block by Block: The Historical and Theoretical Foundations of Thermodynamics

Perseus Publishing is proud to announce the latest volumes in its series of recorded lectures by the late Richard P. Feynman, lectures originally delivered to his physics students at Caltech and later fashioned by the author into his classic textbook Lectures on Physics. Volume 17 (Feynman on Electrodynamics) contains sections on AC circuits, cavity resonators, waveguides, Lorentz transformations, field energy, and field momentum.

How to Solve Problems

Richard Feynman's Six Easy Pieces is the perfect layman's introduction to the mindboggling universe of physics. In Feynman's safe hands, the reader is introduced to the very basics of atoms, energy, force, gravity and quantum behaviour. If the greatest physicist since the Second World War can't explain it to you, no one can.

The Pleasure of Finding Things Out

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What warps when you're traveling at warp speed? What is the difference between a wormhole and a black hole? Are time loops really possible, and can I kill my grandmother before I am born? Anyone who has ever wondered "could this really happen?" will gain useful insights into the Star Trek universe (and, incidentally, the real world of physics) in this charming and accessible guide. Lawrence M. Krauss boldly goes where Star Trek has gone—and beyond. From Newton to Hawking, from Einstein to Feynman, from Kirk to Picard, Krauss leads readers on a voyage to the world of physics as we now know it and as it might one day be.

The Meaning of It All

When engineering students in Canada are soon to graduate, the solemn "Ritual of the Calling of an Engineer," penned by none other than Rudyard Kipling, charges them with their Obligation to high standards, humility, and ethics. Each budding engineer then receives an Iron Ring to be worn on the small finger of the working hand as a reminder throughout their career. Through the story of the 1907 Quebec Bridge disaster, in which seventy-six men died, author Dan Levert teaches a powerful object lesson in what can happen when that Obligation is forgotten. Woven from transcripts of the inquiry into the collapse, the report of the commissioners, and other sources including the coroner's inquest, *On Cold Iron* plays out like a fast-paced thriller. Levert recounts the original 1850s proposals to bridge the St. Lawrence near Quebec City, through the design and construction of what was to be the longest clear span bridge of any kind in the world, to its shocking collapse during construction in August 1907. The missteps, poor policies, hubris, and wrong-headed actions begin to build like a death by a thousand cuts, until its inevitable and horrifying culmination. The meticulously researched and deftly delivered story of this terrible historical event makes fascinating reading for anyone, but even more, it is a powerful cautionary tale and a clarion call for the obligation and responsibility of an engineer.

The Feynman Lectures on Physics

Hermann Weyl (1885–1955) was one of the twentieth century's most important mathematicians, as well as a seminal figure in the development of quantum physics and general relativity. He was also an eloquent writer with a lifelong interest in the philosophical implications of the startling new scientific developments with which he was so involved. *Mind and Nature* is a collection of Weyl's most important general writings on philosophy, mathematics, and physics, including pieces that have never before been published in any language or translated into English, or that have long been out of print. Complete with

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Peter Pesic's introduction, notes, and bibliography, these writings reveal an unjustly neglected dimension of a complex and fascinating thinker. In addition, the book includes more than twenty photographs of Weyl and his family and colleagues, many of which are previously unpublished. Included here are Weyl's exposition of his important synthesis of electromagnetism and gravitation, which Einstein at first hailed as "a first-class stroke of genius"; two little-known letters by Weyl and Einstein from 1922 that give their contrasting views on the philosophical implications of modern physics; and an essay on time that contains Weyl's argument that the past is never completed and the present is not a point. Also included are two book-length series of lectures, *The Open World* (1932) and *Mind and Nature* (1934), each a masterly exposition of Weyl's views on a range of topics from modern physics and mathematics. Finally, four retrospective essays from Weyl's last decade give his final thoughts on the interrelations among mathematics, philosophy, and physics, intertwined with reflections on the course of his rich life.

Feynman's Thesis

Richard Feynman's never previously published doctoral thesis formed the heart of much of his brilliant and profound work in theoretical physics. Entitled "The Principle of Least Action in Quantum Mechanics," its original motive was to quantize the classical action-at-a-distance electrodynamics. Because that theory adopted an overall space-time viewpoint, the classical Hamiltonian approach used in the conventional formulations of quantum theory could not be used, so Feynman turned to the Lagrangian function and the principle of least action as his points of departure. The result was the path integral approach, which satisfied and transcended its original motivation, and has enjoyed great success in renormalized quantum field theory, including the derivation of the ubiquitous Feynman diagrams for elementary particles. Path integrals have many other applications, including atomic, molecular, and nuclear scattering, statistical mechanics, quantum liquids and solids, Brownian motion, and noise theory. It also sheds new light on fundamental issues like the interpretation of quantum theory because of its new overall space-time viewpoint. The present volume includes Feynman's Princeton thesis, the related review article "Space-Time Approach to Non-Relativistic Quantum Mechanics" [Reviews of Modern Physics 20 (1948), 367-387], Paul Dirac's seminal paper "The Lagrangian in Quantum Mechanics" [Physikalische Zeitschrift der Sowjetunion, Band 3, Heft 1 (1933)], and an introduction by Laurie M Brown.

Edexcel A Level Physics Student

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Exercises for use with vol. I of the Feynman lectures in physics

Six Easy Pieces

A portrait of the late Nobel Prize-winning physicist recounts his early enthusiasm for science, work on the atom bomb, and inquiry into the Challenger explosion

Genius

Endorsed by Edexcel Help students to build and develop the essential knowledge and skills needed, provide practical assessment guidance and plenty of support for the new mathematical requirements with this Edexcel Year 1 Student Book. - Supports practical assessment with Practical Skill summaries throughout - Provides support for all 16 required practicals with detailed explanations, data and exam style questions for students to answer - Builds understanding and knowledge with a variety of questions to engage and challenge students throughout the course: prior knowledge, worked examples, Test Yourself and Exam Practice Questions - Acts as an aid for the mathematical requirements of the course with worked examples of calculations and a dedicated 'Maths in Physics' chapter - Develops understanding with free online access to Test yourself Answers, an Extended Glossary, Learning Outcomes and Topic Summaries Edexcel A level Physics Student Book 1 includes AS level.

Cosmology

An omnibus edition of classic adventure tales by the Nobel Prize-winning physicist includes his exchanges with Einstein and Bohr, ideas about gambling with Nick the Greek, and solution to the Challenger disaster, in a volume complemented by an hour-long audio CD of his 1978 "Los Alamos from Below" lecture. 30,000 first printing.

When Physics Became King

Teaches problem-solving style for students in introductory college science and engineering courses.

The Quotable Feynman

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In his first book ever, the father of string theory reinvents the world's concept of the known universe and man's unique place within it. Line drawings.

Six Not-So-Easy Pieces

New York Times Bestseller: This life story of the quirky physicist is “a thorough and masterful portrait of one of the great minds of the century” (The New York Review of Books). Raised in Depression-era Rockaway Beach, physicist Richard Feynman was irreverent, eccentric, and childishly enthusiastic—a new kind of scientist in a field that was in its infancy. His quick mastery of quantum mechanics earned him a place at Los Alamos working on the Manhattan Project under J. Robert Oppenheimer, where the giddy young man held his own among the nation’s greatest minds. There, Feynman turned theory into practice, culminating in the Trinity test, on July 16, 1945, when the Atomic Age was born. He was only twenty-seven. And he was just getting started. In this sweeping biography, James Gleick captures the forceful personality of a great man, integrating Feynman’s work and life in a way that is accessible to laymen and fascinating for the scientists who follow in his footsteps.

Feynman's Tips on Physics

As recently as two hundred years ago, physics as we know it today did not exist. Born in the early nineteenth century during the second scientific revolution, physics struggled at first to achieve legitimacy in the scientific community and culture at large. In fact, the term "physicist" did not appear in English until the 1830s. When *Physics Became King* traces the emergence of this revolutionary science, demonstrating how a discipline that barely existed in 1800 came to be regarded a century later as the ultimate key to unlocking nature's secrets. A cultural history designed to provide a big-picture view, the book ably ties advances in the field to the efforts of physicists who worked to win social acceptance for their research. Beginning his tale with the rise of physics from natural philosophy, Iwan Morus chronicles the emergence of mathematical physics in France and its later export to England and Germany. He then elucidates the links between physics and industrialism, the technology of statistical mechanics, and the establishment of astronomical laboratories and precision measurement tools. His tale ends on the eve of the First World War, when physics had firmly established itself in both science and society. Scholars of both history and physics will enjoy this fascinating and studied look at the emergence of a major scientific discipline.

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Classic Feynman

This companion to The Feynman Lectures on Physics provides hands-on practice for students to test their knowledge and abilities through physics problems ranging from Newtonian mechanics through relativity and quantum mechanics. Original. 15,000 first printing.

Feynman's Tips on Physics Indian ed.

Covering the theory of computation, information and communications, the physical aspects of computation, and the physical limits of computers, this text is based on the notes taken by one of its editors, Tony Hey, on a lecture course on computation given b

The Physics of Star Trek

Mind and Nature

Philosophers have warned of the perils of a life spent without reflection, but what constitutes reflective inquiry - and why it's necessary in our lives - can be an elusive concept. Synthesizing ideas from minds as diverse as John Dewey and Paulo Freire, the Handbook of Reflection and Reflective Inquiry presents reflective thought in its most vital aspects, not as a fanciful or nostalgic exercise, but as a powerful means of seeing familiar events anew, encouraging critical thinking and crucial insight, teaching and learning. In its opening pages, two seasoned educators, Maxine Greene and Lee Shulman, discuss reflective inquiry as a form of active attention (Thoreau's "wide-awakeness"), an act of consciousness, and a process by which people can understand themselves, their work (particularly in the form of life projects), and others. Building on this foundation, the Handbook analyzes through the work of 40 internationally oriented authors: - Definitional issues concerning reflection, what it is and is not; - Worldwide social and moral conditions contributing to the growing interest in reflective inquiry in professional education; - Reflection as promoted across professional educational domains, including K-12 education, teacher education, occupational therapy, and the law; - Methods of facilitating and scaffolding reflective engagement; - Current pedagogical and research practices in reflection; - Approaches to assessing reflective inquiry. Educators across the professions as well as adult educators, counselors and psychologists, and curriculum developers concerned with adult learning will find the

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Handbook of Reflection and Reflective Inquiry an invaluable teaching tool for challenging times.

From Special Relativity to Feynman Diagrams

Our understanding of nature's deepest reality has changed radically, but almost without our noticing, over the past twenty-five years. Transcending the clash of older ideas about matter and space, acclaimed physicist Frank Wilczek explains a remarkable new discovery: matter is built from almost weightless units, and pure energy is the ultimate source of mass. He calls it "The Lightness of Being." Space is no mere container, empty and passive. It is a dynamic Grid—a modern ether— and its spontaneous activity creates and destroys particles. This new understanding of mass explains the puzzling feebleness of gravity, and a gorgeous unification of all the forces comes sharply into focus. The Lightness of Being is the first book to explore the implications of these revolutionary ideas about mass, energy, and the nature of "empty space." In it, Wilczek masterfully presents new perspectives on our incredible universe and envisions a new golden age of fundamental physics.

Exercises in Introductory Physics

Lectures On Computation

Since his first appearance over sixty years ago, Mr Tompkins has become known and loved by many thousands of readers as the bank clerk whose fantastic dreams and adventures lead him into a world inside the atom. George Gamow's classic provides a delightful explanation of the central concepts in modern physics, from atomic structure to relativity, and quantum theory to fusion and fission. Roger Penrose's foreword introduces Mr Tompkins to a new generation of readers and reviews his adventures in light of recent developments in physics.

No Ordinary Genius

At the heart of many fields - physics, chemistry, engineering - lies thermodynamics. While this science plays a critical role in determining the boundary between what is and is not possible in the natural world, it occurs to many as an indecipherable black box, thus making the subject a challenge to learn. Two obstacles contribute to this situation, the first being the disconnect between the fundamental

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theories and the underlying physics and the second being the confusing concepts and terminologies involved with the theories. While one needn't confront either of these two obstacles to successfully use thermodynamics to solve real problems, overcoming both provides access to a greater intuitive sense of the problems and more confidence, more strength, and more creativity in solving them. This book offers an original perspective on thermodynamic science and history based on the three approaches of a practicing engineer, academician, and historian. The book synthesises and gathers into one accessible volume a strategic range of foundational topics involving the atomic theory, energy, entropy, and the laws of thermodynamics.

Practical Physics

One of the most famous science books of our time, the phenomenal national bestseller that "buzzes with energy, anecdote and life. It almost makes you want to become a physicist" (Science Digest). Richard P. Feynman, winner of the Nobel Prize in physics, thrived on outrageous adventures. In this lively work that "can shatter the stereotype of the stuffy scientist" (Detroit Free Press), Feynman recounts his experiences trading ideas on atomic physics with Einstein and cracking the uncrackable safes guarding the most deeply held nuclear secrets—and much more of an eyebrow-raising nature. In his stories, Feynman's life shines through in all its eccentric glory—a combustible mixture of high intelligence, unlimited curiosity, and raging chutzpah. Included for this edition is a new introduction by Bill Gates.

Quantum mechanics

Traces the colorful, turbulent life of the Nobel Prize-winning physicist, from the death of his childhood sweetheart during the Manhattan Project to his rise as an icon in the scientific community.

Tuva Or Bust!

Many appreciate Richard P. Feynman's contributions to twentieth-century physics, but few realize how engaged he was with the world around him—how deeply and thoughtfully he considered the religious, political, and social issues of his day. Now, a wonderful book—based on a previously unpublished, three-part public lecture he gave at the University of Washington in 1963—shows us this other side of Feynman, as he expounds on the inherent conflict between science and religion, people's distrust of politicians, and our universal fascination with flying saucers, faith healing, and mental telepathy. Here we see

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Feynman in top form: nearly bursting into a Navajo war chant, then pressing for an overhaul of the English language (if you want to know why Johnny can't read, just look at the spelling of "friend"); and, finally, ruminating on the death of his first wife from tuberculosis. This is quintessential Feynman—reflective, amusing, and ever enlightening.

The Feynman Lectures on Physics

Feynman's Tips on Physics is a delightful collection of Richard P. Feynman's insights and an essential companion to his legendary Feynman Lectures on Physics. With characteristic flair, insight, and humor, Feynman discusses topics physics students often struggle with and offers valuable tips on addressing them. Included here are three lectures on problem-solving and a lecture on inertial guidance omitted from The Feynman Lectures on Physics. An enlightening memoir by Matthew Sands and oral history interviews with Feynman and his Caltech colleagues provide firsthand accounts of the origins of Feynman's landmark lecture series. Also included are incisive and illuminating exercises originally developed to supplement The Feynman Lectures on Physics, by Robert B. Leighton and Rochus E. Vogt. Feynman's Tips on Physics was co-authored by Michael A. Gottlieb and Ralph Leighton to provide students, teachers, and enthusiasts alike an opportunity to learn physics from some of its greatest teachers, the creators of The Feynman Lectures on Physics.

Feynman Lectures On Computation

Six lectures, all regarding the most revolutionary discovery in twentieth-century physics: Einstein's Theory of Relativity. No one—not even Einstein himself—explained these difficult, anti-intuitive concepts more clearly, or with more verve and gusto, than Feynman.

Quantum Mechanics and Path Integrals [by] R. P. Feynman [and] A. R. Hibbs

This is a uniquely comprehensive and detailed treatment of the theoretical and observational foundations of modern cosmology, by a Nobel Laureate in Physics. It gives up-to-date and self-contained accounts of the theories and observations that have made the past few decades a golden age of cosmology.

Quantum Man: Richard Feynman's Life in Science (Great Discoveries)

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A Nobel Prize-winning physicist, a loving husband and father, an enthusiastic teacher, a surprisingly accomplished bongo player, and a genius of the highest caliber---Richard P. Feynman was all these and more. Perfectly Reasonable Deviations From the Beaten Track--collecting over forty years' worth of Feynman's letters--offers an unprecedented look at the writer and thinker whose scientific mind and lust for life made him a legend in his own time. Containing missives to and from such scientific luminaries as Victor Weisskopf, Stephen Wolfram, James Watson, and Edward Teller, as well as a remarkable selection of letters to and from fans, students, family, and people from around the world eager for Feynman's advice and counsel, Perfectly Reasonable Deviations From the Beaten Track not only illuminates the personal relationships that underwrote the key developments in modern science, but also forms the most intimate look at Feynman yet available. Feynman was a man many felt close to but few really knew, and this collection reveals the full wisdom and private passion of a personality that captivated everyone it touched. Perfectly Reasonable Deviations From the Beaten Track is an eloquent testimony to the virtue of approaching the world with an inquiring eye; it demonstrates the full extent of the Feynman legacy like never before. Edited and with additional commentary by his daughter Michelle, it's a must-read for Feynman fans everywhere, and for anyone seeking to better understand one of the towering figures--and defining personalities--of the twentieth century.

The Philosopher's Toolkit

The specialty of reducing deep ideas to simple, understandable terms is evident throughout The Feynman Lectures on Physics, but nowhere more so than in his treatment of quantum mechanics. He has presented, to beginning students, the path integral method, the technique of his own devising that allowed him to solve some of the most profound problems in physics.

Mathematics for Physics

The Book Has Been Written Keeping In Mind The Experiments Carried Out At B.Sc. Level At Indian Universities. It Is Written In An Easy To Understand And Systematic Format. Detailed Description Of Different Apparatus, Related Errors And Their Handling Is An Added Feature Of The Book. Tables Of Physical Constants Are Also Presented. More Than One Experimental Method For Determining A Physical Parameter Is Given So That Student Can Appreciate The Intricacies.

On Cold Iron

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This collection from scientist and Nobel Peace Prize winner highlights the achievements of a man whose career reshaped the world's understanding of quantum electrodynamics. The Pleasure of Finding Things Out is a magnificent treasury of the best short works of Richard P. Feynman—from interviews and speeches to lectures and printed articles. A sweeping, wide-ranging collection, it presents an intimate and fascinating view of a life in science—a life like no other. From his ruminations on science in our culture to his Nobel Prize acceptance speech, this book will fascinate anyone interested in the world of ideas.

The Cosmic Landscape

Exercises for the Feynman Lectures on Physics

The second edition of this popular compendium provides the necessary intellectual equipment to engage with and participate in effective philosophical argument, reading, and reflection. Features significantly revised, updated and expanded entries, and an entirely new section drawn from methods in the history of philosophy. This edition has a broad, pluralistic approach—appealing to readers in both continental philosophy and the history of philosophy, as well as analytic philosophy. Explains difficult concepts in an easily accessible manner, and addresses the use and application of these concepts. Proven useful to philosophy students at both beginning and advanced levels.

Handbook of Reflection and Reflective Inquiry

A treasure-trove of illuminating and entertaining quotations from beloved physicist Richard P. Feynman. "Some people say, 'How can you live without knowing?' I do not know what they mean. I always live without knowing. That is easy. How you get to know is what I want to know."—Richard P. Feynman. Nobel Prize-winning physicist Richard P. Feynman (1918–88) was that rarest of creatures—a towering scientific genius who could make himself understood by anyone and who became as famous for the wit and wisdom of his popular lectures and writings as for his fundamental contributions to science. The Quotable Feynman is a treasure-trove of this revered and beloved scientist's most profound, provocative, humorous, and memorable quotations on a wide range of subjects. Carefully selected by Richard Feynman's daughter, Michelle Feynman, from his spoken and written legacy, including interviews, lectures, letters, articles, and books, the quotations are arranged under two dozen topics—from art, childhood, discovery, family,

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imagination, and humor to mathematics, politics, science, religion, and uncertainty. These brief passages—about 500 in all—vividly demonstrate Feynman's astonishing yet playful intelligence, and his almost constitutional inability to be anything other than unconventional, engaging, and inspiring. The result is a unique, illuminating, and enjoyable portrait of Feynman's life and thought that will be cherished by his fans at the same time that it provides an ideal introduction to Feynman for readers new to this intriguing and important thinker. The book features a foreword in which physicist Brian Cox pays tribute to Feynman and describes how his words reveal his particular genius, a piece in which cellist Yo-Yo Ma shares his memories of Feynman and reflects on his enduring appeal, and a personal preface by Michelle Feynman. It also includes some previously unpublished quotations, a chronology of Richard Feynman's life, some twenty photos of Feynman, and a section of memorable quotations about Feynman from other notable figures. Features: Approximately 500 quotations, some of them previously unpublished, arranged by topic A foreword by Brian Cox, reflections by Yo-Yo Ma, and a preface by Michelle Feynman A chronology of Feynman's life Some twenty photos of Feynman A section of quotations about Feynman from other notable figures Some notable quotations of Richard P. Feynman: "The thing that doesn't fit is the most interesting." "Thinking is nothing but talking to yourself inside." "It is wonderful if you can find something you love to do in your youth which is big enough to sustain your interest through all your adult life. Because, whatever it is, if you do it well enough (and you will, if you truly love it), people will pay you to do what you want to do anyway." "I'd hate to die twice. It's so boring."

The Lightness of Being

A close friend of physicist Richard Feynman chronicles his relationship with the scientist and describes their ten-year quest to reach the remote country of Tannu Tuva.

"Surely You're Joking, Mr. Feynman!": Adventures of a Curious Character

When, in 1984-86, Richard P. Feynman gave his famous course on computation at the California Institute of Technology, he asked Tony Hey to adapt his lecture notes into a book. Although led by Feynman, the course also featured, as occasional guest speakers, some of the most brilliant men in science at that time, including Marvin Minsky, Charles Bennett, and John Hopfield. Although the lectures are now thirteen years old, most of the material is timeless and presents a 'Feynmanesque' overview of many standard and some not-so-standard topics in computer science such as reversible logic gates and quantum computers.

The Feynman Lectures on Physics

Perfectly Reasonable Deviations from the Beaten Track

An engagingly-written account of mathematical tools and ideas, this book provides a graduate-level introduction to the mathematics used in research in physics. The first half of the book focuses on the traditional mathematical methods of physics - differential and integral equations, Fourier series and the calculus of variations. The second half contains an introduction to more advanced subjects, including differential geometry, topology and complex variables. The authors' exposition avoids excess rigor whilst explaining subtle but important points often glossed over in more elementary texts. The topics are illustrated at every stage by carefully chosen examples, exercises and problems drawn from realistic physics settings. These make it useful both as a textbook in advanced courses and for self-study. Password-protected solutions to the exercises are available to instructors at www.cambridge.org/9780521854030.

Mr Tompkins in Paperback

This book, now in its second edition, provides an introductory course on theoretical particle physics with the aim of filling the gap that exists between basic courses of classical and quantum mechanics and advanced courses of (relativistic) quantum mechanics and field theory. After a concise but comprehensive introduction to special relativity, key aspects of relativistic dynamics are covered and some elementary concepts of general relativity introduced. Basics of the theory of groups and Lie algebras are explained, with discussion of the group of rotations and the Lorentz and Poincaré groups. In addition, a concise account of representation theory and of tensor calculus is provided. Quantization of the electromagnetic field in the radiation range is fully discussed. The essentials of the Lagrangian and Hamiltonian formalisms are reviewed, proceeding from systems with a finite number of degrees of freedom and extending the discussion to fields. The final four chapters are devoted to development of the quantum field theory, ultimately introducing the graphical description of interaction processes by means of Feynman diagrams. The book will be of value for students seeking to understand the main concepts that form the basis of contemporary theoretical particle physics and also for engineers and lecturers. An Appendix on some special relativity effects is added.

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