Making Things Move Diy Mechanisms For Inventors Hobbyists And Artists Dustyn Roberts

This practical, user-friendly reference book of common mechanical engineering concepts is geared toward makers who don't have (or want) an engineering degree but need to know the essentials of basic mechanical elements to successfully accomplish their personal projects. The book provides practical mechanical engineering information (supplemented with the applicable math, science, physics, and engineering theory) without being boring like a typical textbook. Most chapters contain at least one hands-on, fully illustrated, step-by-step project to demonstrate the topic being discussed and requires only common, inexpensive, easily sourced materials and tools. Some projects also provide alternative materials and tools and processes to align with the reader's individual preferences, skills, tools, and materials-at-hand. Linked together via the authors' overarching project -- building a kid-sized tank -- the chapters describe the thinking behind each mechanism and then expands the discussions to similar mechanical concepts in other applications. Written with humor, a bit of irreverence, and entertaining personal insights and first-hand experiences, the book presents complex concepts in an uncomplicated way. Highlights include: Provides mechanical engineering information that includes math, science, physics and engineering theory without being a textbook Contains hands-on projects in each chapter that require common, inexpensive, easily sourced materials and tools All hands-on projects are fully illustrated with step-by-step instructions Some hands-on projects provide alternative materials and tools/processes to align with the reader's individual preferences, skills, tools and materials-at-hand Includes real-world insights from the authors like tips and tricks ("Staying on Track") and fail moments ("Lost Track!") Many chapters contain a section ("Tracking Further") that dives deeper into the chapter subject, for those readers that are interested in more details of the topic Builds on two related Make: projects to link and illustrate all the chapter topics and bring individual concepts together into one system Furnishes an accompanying website that offers further information, illustrations, projects, discussion boards, videos, animations, patterns, drawings, etc. Learn to effectively use professional mechanical engineering principles in your projects, without having to graduate from engineering school!

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Turn your imaginative ideas into reality with help from this practical, inventive guide. Discover how to: Find and select materials Fasten and join parts Measure force, friction, and torque Understand mechanical and electrical power, work, and energy Create and control motion Work with bearings, couplers, gears, screws, and springs Combine simple machines for work and fun Projects include: Rube Goldberg breakfast machine Mousetrap powered car DIY motor with magnet wire Motor direction and speed control Designing and fabricating spur gears Animated creations in paper An interactive rotating platform Small vertical axis wind turbine SADbot: the seasonally affected drawing robot Make Great Stuff! TAB, an imprint of McGraw-Hill Professional, is a leading publisher of DIY technology books for makers, hackers, and electronics hobbyists.

Spark continual creative growth for both learners and educators. Creativity is a key ingredient for success in the knowledge economy of the 21st century, where skills such as collaboration, communication, and critical thinking are central. Most educators agree that encouraging creativity must become a central goal in the classroom, but they face an ongoing struggle to build and maintain an environment that promotes their students' creative development. In Creative Development: Transforming Education through Design Thinking, Innovation, and Invention, Robert Kelly equips educators with the theory, strategies, and tactics that allow creativity to flourish. Creative Development features voices from the field to showcase practical, real-life examples of successfully fostering creative development in education. Topics include: How to create an educational culture conducive to creative development. Effective instructional design and assessment as creativity. Bridging the gap between design thinking and design doing. Teacher education and training for creative classrooms. Key vocabulary and theory in the field of creativity.

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This book represents an invaluable and up-to-date international exchange of research, case studies and best practice to tackle the challenges of digital technology, computer-aided design, 3D modeling, prototyping machines and computational design. With contributions from leading experts in the field of industrial design and cultural heritage, it is split into three parts. The first part explores basic rules of design, design models and shape grammar, including the management of complex forms, and proves that innovative concepts may be derived from organic models using generative design. The second part then investigates responsive design, describing how to manage the changing morphologies of buildings through pre-programmed mechanisms of real-time response and feedback embedded in inhabitable spaces. Lastly, the third part focuses on digital heritage and its capability to increase the interaction and manipulation of object and concepts, ranging from augmented reality to modeling generative tools. The book gathers peer-reviewed papers presented at the eCAADe (Education and Research in Computer-Aided Architectural Design in Europe) Regional International Symposium, held in Milan, Italy, in 2015.

In Making Things Move -Die Welt bewegen lernen Sie die Welt der Mechanik und Maschinen auf eine ganz neue und unterhaltsame Weise kennen. Verstehen Sie die Regeln und Gesetze der Mechanik durch nicht-technische Erklarungen, einleuchtende Beispiele und tolle Do-It-Yourself-Projekte: von beweglichen Kunstinstallationen uber kreative Spielzeuge bis hin zu arbeitserleichternden Geraten. Zahlreiche Fotos, Illustrationen, Screenshots und 3-D-Modelle begleiten jedes Projekt. Making Things Move - Die Welt bewegen setzt bei den vorgestellten Do-It-Yourself-Projekten auf Standardteile aus dem Baumarkt, leicht beziehbaren Materialien uber den Versandhandel und allgemeine Herstellungstechniken, die sich jeder leicht aneignen kann. Einfache Projekte zu Beginn des Buches verhelfen Ihnen zu soliden DIY-Kenntnissen, die in den komplexeren Projekten im weiteren Verlauf des Buches erneut zur Anwendung kommen. Ein Ausflug in die Welt der Elektronik am Ende des Buches fuhrt Sie in die Funktions- und Steuerungsweise des Microcontrollers Arduino ein. Mit Making Things Move - Die Welt bewegen werden Ihre kreativen Ideen zur bewegten Wirklichkeit.

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Simplified Chinese edition of the Da Vinci Code by Dan Brown.

TEAM ARDUINO UP WITH ANDROID FOR SOME MISCHIEVOUS FUN! Filled with practical, do-it-yourself gadgets, Arduino + Android Projects for the Evil Genius shows you how to create Arduino devices and control them with Android smartphones and tablets. Easy-to-find equipment and components are used for all the projects in the book. This wickedly inventive guide covers the Android Open Application Development Kit (ADK) and USB interface and explains how to use them with the basic Arduino platform. Methods of communication between Android and Arduino that don't require the ADK--including sound, Bluetooth, and WiFi/Ethernet are also discussed. An Arduino ADK programming tutorial helps you get started right away. Arduino + Android Projects for the Evil Genius: Contains step-by-step instructions and helpful illustrations Provides tips for customizing the projects Covers the underlying principles behind the projects Removes the frustration factor--all required parts are listed Provides all source code on the book's website Build these and other devious devices: Bluetooth robot Android Geiger counter Android-controlled light show TV remote Temperature logger Ultrasonic range finder Home automation controller Remote power and lighting control Smart thermostat RFID door lock Signaling flags Delay timer

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Popular Science gives our readers the information and tools to improve their technology and their world. The core belief that Popular Science and our readers share: The future is going to be better, and science and technology are the driving forces that will help make it better.

STEMathematics is an instructional resource designed primarily for secondary level mathematics teachers and students interested in discovering how mathematics describes (and is applied to) our natural world. This resource provides both the historical elements and the technical aspects of various topics in mathematics that provide instructional context in the

sciences, technology, and engineering, (STEM) disciplines. The purpose of STEMathematics is to help teachers become more personally interested in the topics they teach and to gain a broader perspective of how mathematics can be integrated with other subject disciplines.

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instructions."--BoingBoing This wickedly inventive guide explains how to design and build 15 fiendishly fun electronics projects. Filled with photos and illustrations, 15 Dangerously Mad Projects for the Evil Genius includes step-by-step directions, as well as a construction primer for those who are new to electronics projects. Using easy-to-find components and equipment, this do-it-yourself book shows you how to create a variety of mischievous gadgets, such as a remote-controlled laser, motorized multicolored LEDs that write in the air, and a surveillance robot. You'll also learn to use the highly popular Arduino microcontroller board with three of the projects. 15 Dangerously Mad Projects for the Evil Genius: Features step-by-step instructions and helpful illustrations Covers essential safety measures Reveals the scientific principles behind the projects Removes the frustration factor--all required parts are listed, along with sources Build these devious devices to amaze your friends and confound your enemies! Coil gun Trebuchet Ping pong ball minigun Mini laser turret Balloon-popping laser gun Touch-activated laser sight Laser-grid intruder alarm Persistence-of-vision display Covert radio bug Laser voice transmitter Flash bomb High-brightness LED strobe Levitation machine Snailbot Surveillance robot Each fun, inexpensive Evil Genius project includes a detailed list of materials, sources for parts, schematics, and lots of clear, well-illustrated instructions for easy assembly. The larger workbook-style layout and convenient two-column format make following the step-by-step instructions a breeze. VIDEOS, PHOTOS, AND SOURCE CODE ARE AVAILABLE AT WWW.DANGEROUSLYMAD.COM Make Great Stuff! TAB, an imprint of McGraw-Hill Professional, is a leading publisher of DIY technology books for makers, hackers, and electronics hobbyists.

Supercharge your understanding of battery technology Ideal for hobbyists and engineers alike, The TAB Battery Book: An In-Depth Guide to Construction Design and Use offers comprehensive coverage of these portable energy powerhouses. This practical guide discusses battery chemistry and engineering, how batteries are used, and the history of batteries. You'll find out how different types of batteries work and how to select the right battery for any application. The book also examines the technological advances being used to develop batteries as robust energy sources for a wide variety of devices. Tap into the power of all kinds of batteries with help from this detailed resource. Coverage includes: Portable energy and long-term energy storage Batteries for portable consumer demands, medical devices, electric vehicles, large-scale electrical energy storage, and space and military applications Basic physics and chemistry The science of batteries--cells, electrochemistry, thermodynamics, kinetics, and capacity Battery engineering designs, including electrode, seal, and vent design Battery performance, reliability, and safety Primary battery technologies--aqueous and non-aqueous electrolytes, including alkaline and lithium Rechargeable batteries, including nickel-metal hydride and lithium ion Selecting the right battery for any application Future technologies, such as thin-film, large-energy storage, and high-energy density batteries Make Great Stuff! TAB, an imprint of McGraw-Hill Professional, is a leading publisher of DIY technology books for makers, hackers, and electronics hobbyists.

What types of robots will the future bring? How do biomedical devices help patients? Have you ever wondered how your phone works? In Engineering: Cool Women Who Design, readers ages 9 to 12 meet three women who are working hard in the engineering field. Elsa Garmire has designed many devices that use lasers and light. Amy Kerdok designs medical and surgical devices. Anna Stork co-founded LuminAID Lab, a company that produces solar lighting products for the developing world and beyond. Engineering combines high-interest content with links to online primary sources and essential questions that further expand kids' knowledge and understanding of a topic they come in contact with every day. Nomad Press books in the Girls in Science series supply a bridge between girls' interests and their potential futures by investigating science careers and introducing women who have succeeded in science. Compelling stories of real-life engineers provide readers with role models that they can look toward as examples of how it can be done.

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