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Titolo	Learn Engineering with LEGO : A Practical Introduction to Engineering Concepts // by Grady Koch
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ISBN	1-4842-9280-4
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (428 pages)
Collana	Maker Innovations Series, , 2948-2550
Disciplina	621
Soggetti	Engineering - Experiments Experiential learning LEGO Mindstorms toys
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Chapter 1: The Hub -- Chapter 2: Programming -- Chapter 3: Building Elements -- Chapter 4: Gears -- Chapter 5: Mechanisms -- Chapter 6: Motors -- Chapter 7: The Motion Sensor -- Chapter 8: The Distance Sensor -- Chapter 9: The Color Sensor -- Appendix A: Parts List.
Sommario/riassunto	LEGO Mindstorms and SPIKE Prime are great products with vast capabilities, but are often so complex that many people don't know how to use them. LEGO provides a walk-through of a few projects to build, which are cool, but after building these many people get stuck on "now what?" This book answers that question by showing the underlying principles required to build their own ideas. This book is a hands-on tour of how machines work with LEGO-there's nothing like building a machine with your own two hands to understand how it works. It includes aspects of software engineering, mechanical engineering, and electrical engineering. As parts and associated engineering concepts are presented, they will be shown in their practical use with graphical step-by-step assembly instructions. The concepts conveyed are mostly learned through building examples, with text explanation to reinforce the ideas being learned. Every engineering concept has a building example to go with it, in a quick build of less than 15 assembly steps. At the end of each chapter there's a project to tie the concepts of the chapter together of a little more complexity,

involving 15 to 30 steps. These assembly steps are drawn with a computer aided design program that looks like the diagrams that LEGO produces for its products, so readers will be familiar with the look of the assembly directions. What You Will Learn • How to layout a Word Blocks or Python computer program from scratch • How LEGO building elements are meant to be assembled • How to manipulate the power source of a rotating shaft from an electric motor • How gears manipulate the speed and torque of a power train • Basic mechanisms (turntable, differential, cam, ratchet, etc.) to change the motion from a rotating shaft to a desired action a quick build of less than 15 assembly steps. At the end of each chapter there's a project to tie the concepts of the chapter together of a little more complexity, involving 15 to 30 steps. These assembly steps are drawn with a computer aided design program that looks like the diagrams that LEGO produces for its products, so readers will be familiar with the look of the assembly directions. .
