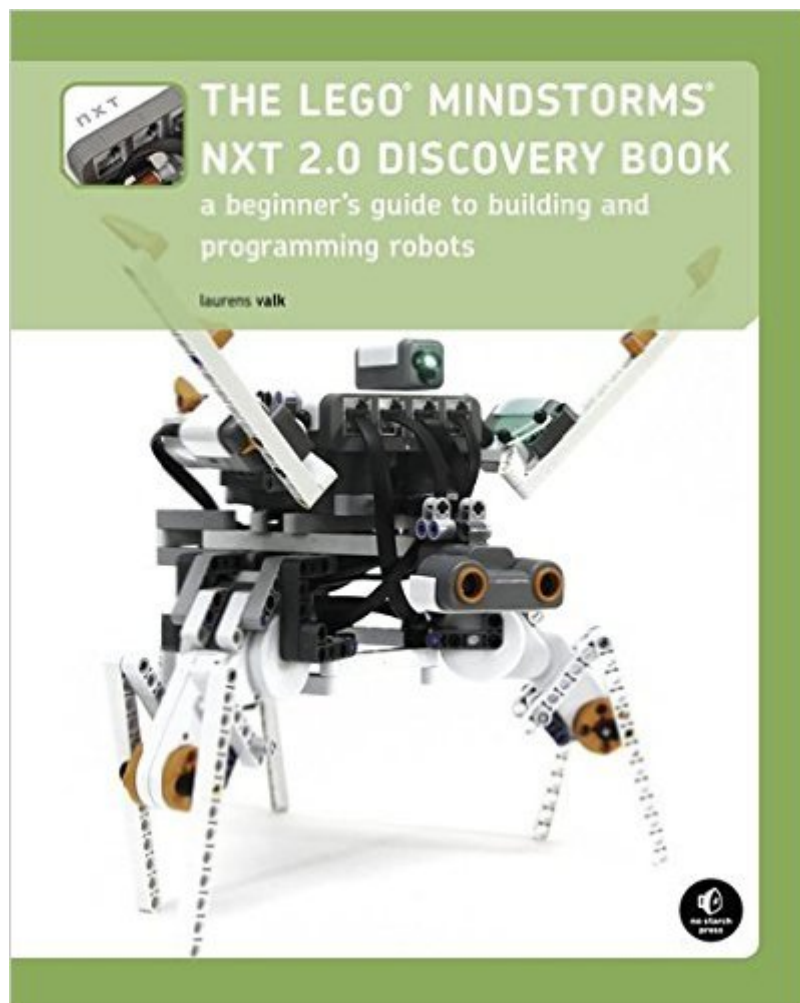


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# The LEGO MINDSTORMS NXT 2.0 Discovery Book: A Beginner's Guide To Building And Programming Robots



## Synopsis

Discover the many features of the LEGO MINDSTORMS NXT 2.0 set. The LEGO MINDSTORMS NXT 2.0 Discovery Book is the complete, illustrated, beginner's guide to MINDSTORMS that you've been looking for. The crystal clear instructions in the Discovery Book will show you how to harness the capabilities of the NXT 2.0 set to build and program your own robots. Author and robotics instructor Laurens Valk walks you through the set, showing you how to use its various pieces, and how to use the NXT software to program robots. Interactive tutorials make it easy for you to reach an advanced level of programming as you learn to build robots that move, monitor sensors, and use advanced programming techniques like data wires and variables. You'll build eight increasingly sophisticated robots like the Strider (a six-legged walking creature), the CCC (a climbing vehicle), the Hybrid Brick Sorter (a robot that sorts by color and size), and the Snatcher (an autonomous robotic arm). Numerous building and programming challenges throughout encourage you to think creatively and to apply what you've learned as you develop the skills essential to creating your own robots.

**Requirements:** One LEGO MINDSTORMS NXT 2.0 set (#8547)

**Features**

- A complete introduction to LEGO MINDSTORMS NXT 2.0
- Building and programming instructions for eight innovative robots
- 50 sample programs and 72 programming challenges (ranging from easy to hard) encourage you to explore newly learned programming techniques
- 15 building challenges expand on the robot designs and help you develop ideas for new robots

**Who is this book for?** This is a perfect introduction for those new to building and programming with the LEGO MINDSTORMS NXT 2.0 set. The book also includes intriguing robot designs and useful programming tips for more seasoned MINDSTORMS builders.

## Book Information

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## Customer Reviews

I (a hardware/software developer and radio ham for some 30 years) bought LEGO Mindstorms for my now eight-year-old son last Christmas. Being a LEGO nut since he was old enough not to swallow the pieces, he's had great fun with Mindstorms since then. But after you've built the models detailed in the Mindstorms kit, where do you go next? The Mindstorms online help is pretty good, but tiresome to read on the screen, and not the best medium for a youngster. The Alpha Rex etc. are impressive but it's hard for a child to try to make his own models of a similar complexity on the basis of the models in the Mindstorms kit. There is a huge gap between copying ready-made models and learning to create real robots from scratch, and Laurens Valk's book fills that gap perfectly. As "the missing manual", this book thoroughly explains the NXT hardware and NXT-G software, in enough technical detail to satisfy a seasoned programmer like me, but without overloading someone who is completely new to the technology. That is no mean feat! The building instructions are of a similar quality to those provided in the all-too-slim Mindstorms manual, and my son was able to follow them and the programming instructions with only minimal guidance from me (usually because we hadn't yet read the accompanying text! :-). Now, there are several ways to approach this book. To get started quickly, you or your child genius can simply follow the detailed building and programming instructions to create any of the eight robots detailed in the book. My son had almost no trouble doing this: in fact, he first went after the more complex models like the Strider featured on the cover, followed by the very impressive Chimney Climber.

I purchased this book to encourage my 9 year old son to explore the robot he and his sister had received as a gift. Although my 11 year old daughter was trained in basic building and programming of the robot through a semester-long middle school robotics class, my inexperienced son felt overwhelmed by the task and confused by the programming. This book has been helpful and encouraging for him. We started the book together so I could ensure he understood the format of the book and the types of terms used. Though I expected the book would need to be a mother/son project, he quickly was able to read the sections and complete the programming tasks on his own. Each section gave him a simple task to learn the basic programming, then a challenge or two to figure out on his own using the programming skills he was mastering. In this first part of the book, he is able to complete two or three challenges before getting tired of trial and error (for example, to

determine the correct degrees of axle rotation to make the robot turn 180 degrees) or bored with the robot. This takes him 20 to 45 minutes (including the time it takes to demonstrate the robot's new skills for me), depending on the challenges he is completing. By the end of the third chapter he was designing "tasks" for the robot to complete and planning his own simple programs. At 9, he is able to build the robots in this book by himself or with very minor assistance. He is also using his newly developed skills to plan small modifications to the basic robot designs in the book, but not creating robots alone.

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