

gizmologist's booklist

must haves, in order of importance to me:

1. Your own sketchbook is, without a doubt, the most important book you should possess to make automata and gizmos.
2. *Automata and Mechanical Toys* by Rodney Peppe. This is one of the best books I own because it is a source book that features 21 leading automaton makers. Also, my favorite part of the book is devoted to making automata mechanisms, and detailed plans are included. There is also an explanation of various cams and their movements and effects. The section on tools and materials is priceless.
3. *Cabaret mechanical Movement, Understanding Movement and Making Automata*, by Aidan Lawrence Onn and Gary Alexander. This book is packed with practical tips and ideas for making your own automata, moving toys and mechanical sculpture, as well as enough theory in plain language to do wonderful things.
4. *Paper Automata Mechanisms* by Walter Ruffler. I love this book, and I use it in my "Gizmology 101" class. There are plans within the book to make five working mechanisms out of paper; you simply cut them out and glue them together. There are some problems with the construction because of the weakness in the material, namely paper, and I have learned to show my students how to reinforce the structures. I have also used foam core and wooden dowels to reinforce them.
5. *Paper Automata* by Rob Ives, *Automata too!*, and *Walking Automata* by Magdalen Bear. Like Ruffler's book, these are cut out and paste books. They feature a train moving through a tunnel, jumping sheep, and a total of 14 projects that are fun to make and fun to make work. And like Ruffler's book, I use these books in my class. They also suffer the same weakness in construction. I should emphasize that part of the problem is in the student's ability, as well as the strength, or lack thereof, of paper. The mechanisms and designs are fantastic!
6. *Making Mechanical Toys* by Rodney Peppe. This is a great book because it shows with plans, instructions and detailed photographs how to make 17 toys. This is pretty much a how-to book, but making the projects is important for practical experience.
7. *Amazing Machines* by Keith Good. This is a thin book, but it is packed with great ideas like basic structures, pulleys, cams, etc. The instructions and images are easy to read and follow, and making these machines is fun and easy; they translate easy into more complicated machines.
8. *Five Hundred and Seven Mechanical Movements* by Henry T. Brown. This book shows many things I don't understand, but even the movements I don't get sometimes get my juices flowing when I am stuck.
9. *Toys and Models, A Sourcebook of Ideas* by Rodney Peppe. It is a book packed with ideas of toys, models, and automata. The main source of the book is Peppe's combined career as a children's author/illustrator with designing and making toys, models, and automata.

nice to have, in no particular order:

1. *Janice VanCleave's Machines*. "Mind-boggling experiments you can turn into science fair projects. I learned how to make bearings using marbles. There are 20 simple and great ideas to keep projects moving forward.
2. *Janice VanCleave's Physics for Every Kid*. You learn basic physics from 101 projects and activities.
3. *Traditional Wooden Toys, their history and how to make them* by Cyril Hobbins. This is a great book of wooden "folk" toys, dolls, and games from around the world. I love that the book says that these toys are "created from the heart rather than for profit." Hobbins has a long history as a maker of many things, and he speaks from this position.
4. *Making Wooden Mechanical Models* by Alan and Gill Bridgewater. This is a book that shows how to make 15 designs. They are beautiful. I've not made any of these, though, because special and pricy tools are needed, which I don't have. It is nice to see the "guts" of machines.
5. *Easy-to-Make Whirligigs* and *Making Animated Whirligigs* by Anders S. Lunde. These are nice books because they show how to make whirligigs, which are easy to make mechanisms that show basic mechanical principles. These books have patterns and detailed instructions.
6. *Folk Toys Patterns and Projects for the Scroll Saw* by Ken Folk. This is a no nonsense book that says very little but shows in detail the patterns and plans for 19 pull-cord, hand-crank, and gravity-operated classic toys.