

Planes Gliders And Paper Rockets Simple Flying Things Anyone Can Make Kites And Copters Too

From the Coke and Mentos fountain makers who found initial fame via Maker Faire and YouTube (more than 150 million views!) comes this collection of DIY science projects guaranteed to inspire a love of experimentation. Fritz Grobe and Stephen Voltz, also known as EepyBird, share their favorite projects: a giant air vortex cannon, a leaf blower hovercraft, a paper airplane that will fly forever, and many more. Each experiment features instructions that will take users from amateur to showman level—there's something here for all skill levels—alongside illustrations, photographs, and carefully explained science. How to Build a Hovercraft is guaranteed to engage curious minds and create brag-worthy results! Make: High-Power Rockets is for all the science geeks who look at the moon and try to figure out where Neil Armstrong walked, watch in awe as rockets lift off, and want to fly their own model rockets. Starting with an overview of mid- and high-power rocketry, readers will start out making rockets with F and G engines, and move on up to H engines. Presents step-by-step instructions for folding twenty different kinds of paper airplanes and provides illustrated papers for 112 planes.

Make: Planes, Gliders and Paper Rockets Simple Flying Things Anyone Can Make--Kites and Copters, Too!

Fly high with paper models of some of the most astonishing aircraft and spacecraft ever designed! The Smithsonian's National Air and Space Museum hosts seven million visitors annually—a testament to our enduring fascination with flight. Noted origami artist John Szinger has created this unique collection of paper airplane and rocket models inspired by real life flying machines. Let your imagination soar with 14 original designs, including: A Supersonic Transport, recalling the golden age of commercial hypersonic travel The Space Pod, designed to safely return astronauts to earth through the intense heat of re-entry A graceful Hot Air Balloon—make several to create your own miniature ballooning festival An elusive Flying Saucer—try as they might, the government can't conceal this one A sci-fi inspired Art Deco Rocket with exaggerated fins and sleek lines And many other thrilling origami air and space models! Air and Space Origami Kit contains everything you need to create high quality air and space models: A colorful 64-page step-by-step origami instructions book 14 exciting air and space origami projects 48 sheets of downloadable, double-sided folding paper for printing at home Each model comes complete with a set of interesting facts about the vehicle, as well as detailed step-by-step instructions showing you how to fold it. Air and Space Origami Kit is perfect for aspiring astronauts and origami beginners of all ages!

This book teaches the reader to build rockets--powered by compressed air, water, and solid propellant--with the maximum possible fun, safety, and educational experience. Make: Rockets is for all the science geeks who look at the moon and try to figure out where Neil Armstrong walked, watch in awe as rockets lift off, and want to fly their own model rockets. Starting with the basics of rocket propulsion, readers will start out making rockets made from stuff lying around the house, and then move on up to air-, water-, and solid propellant-powered rockets. Most of the rockets in the book can be built from parts in the Estes Designer Special kit.

Did you know that helicopters can fly forward, backward, and side-to-side? Or that the wingspan of a jumbo jet is almost twice as long as the distance of the Wright Brothers' first flight? Since recorded time, man has looked to the sky and dreamed of ways to fly there. A is for Airplane: An Aviation Alphabet celebrates the roots, inventions, and spirit of the science of flight. Young readers will learn about famous events such as the Spirit of St. Louis's nonstop flight across the Atlantic Ocean and the launch of Columbia STS-1 (the first space shuttle), as well as meet courageous aviators who broke barriers in the air and on Earth like the Tuskegee Airmen and Amelia Earhart. Aircraft of all kinds, including giant airships, wind-dependent gliders, and awe-inspiring F-16s, are depicted in spectacular artwork. The glory of flight is brought to stunning life. As a teacher, parent, and published author Mary Ann McCabe Riehle has encouraged young students and adults to follow their dreams and tell their stories. A is for Aviation is her third children's book. A featured author and speaker at several reading and writing conferences, Mary Ann lives in Dexter, Michigan. David Craig is an avid history buff and his remarkable skill at depicting historical events and people has led to diverse projects including collector's plates and a millennial champagne label. His children's book, First to Fly, the story of the Wright Brothers, won the inaugural James Madison Book Award. David lives in Mississauga, Ontario.

Making Simple Robots is based on one idea: Anybody can build a robot! That includes kids, school teachers, parents, and non-engineers. If you can knit, sew, or fold a flat piece of paper into a box, you can build a no-tech robotic part. If you can use a hot glue gun, you can learn to solder basic electronics into a low-tech robot that reacts to its environment. And if you can figure out how to use the apps on your smart phone, you can learn enough programming to communicate with a simple robot. Written in language that non-engineers can understand, Making Simple Robots helps beginners move beyond basic craft skills and materials to the latest products and tools being used by artists and inventors. Find out how to animate folded paper origami, design a versatile robot wheel-leg for 3D printing, or program a rag doll to blink its cyborg eye. Each project includes step-by-step directions as well as clear diagrams and photographs. And every chapter offers suggestions for modifying and expanding the projects, so that you can return to the projects again and again as your skill set grows.

Fill the skies with your very own collection of colorful 3D dragons! This paper airplane book features a fabulous variety of dragon-themed paper planes—each with a unique form and flight characteristics. The full-color instructions provide step-by-step folding instructions for each model and "dragon mastery tips" to help you coax the best performance from each airplane. Folding these fun and challenging planes is a great activity for brain gymnastics! This book includes 12 exciting dragons, including: The Chinese Dragon, a front-weighted dart that covers distance at an alarming rate! The Fighter Dragon, a fanciful dinosaur-cyborg warplane! The Swoop Dragon, an aerobic performer that can turn on you if you're not careful! The Flying Shark, a menacing glider that patrols the skies in search of its prey! And many other impressive flying dragons! This paper airplane kit includes: 48 printable paper airplane folding sheets A 64 page full-color instruction book 12 original dragon-themed paper airplane designs **Winner of Creative Child Magazine 2018 Book of the Year Award**

What if a kangaroo jumped on a trampoline? What happens when a chameleon gets mad? Would an aardvark raid your fridge? There's no question too crazy for this book. The wilder the better! You'll find answers to 100 of the silliest scenarios in the animal kingdom, with answers

and explanations based on real science and research. This information-and joke-packed book covers everything you wanted to know about weight-lifting gorillas (impressive) or playing volleyball with a puffer fish (not recommended). Full-color illustrations and photographs bring the animals and their challenges to life. You'll laugh. You'll be amazed. And you'll finally get the answers to the wildest what-ifs.

From the author of *Trucks Roll!*, an up-in-the-clouds exploration of all things airplane. World's mighty big but there's just one sky and it's yours to travel. Planes fly! Take to the skies with this fun, rhyming book about all that planes do! From jet planes to puddle jumpers, from the cockpit to the rudders, this book explores it all—and the bright, dynamic illustrations will keep even the youngest of readers engaged. Learn the basics of how things fly, then go fly some paper airplanes! Use the simple-to-assemble launcher for high-speed, long-distance launches. Boxed kit includes colorful sheets with cool designs to make 100 paper airplanes, a cardboard launcher, rubber bands, sticker sheets, and a 36-page booklet. Paper airplane models start with simple designs and progress to distance gliders, stunt planes, clever aerodynamic shapes, and even a space shuttle! Booklet includes the basics of aerodynamics and aviation as well as folding instructions for each airplane design.

People have been playing music on homemade instruments for thousands of years. But creating new instruments is much more than an art form. When you want to make a note sound higher or lower, you have to change the sound waves coming out of the instrument. That's science! When you explore the way different materials produce different sounds, that's engineering. When you speed up or slow down a song, you're counting beats -- using math. And technology makes electronic instruments and devices to record and play back music possible. Driven by smart leadership and the constant evolution of computing hardware and software, Roblox has seen a surge in users over the past year. The company has shrewdly positioned itself as a powerful and flexible sandbox game, one which allows users to not only create their own structures, environments, and games, but also encourages them to come together socially and interact collectively. Roblox even gives kids a way to make real money on their creations! *Master Builder Roblox: The Essential Guide* provides users an exciting jumpstart into the fascinating, dynamic world of Roblox, and helps guide kids towards a fun and fulfilling experience. Main topics include an introduction to the world, a tour of the coolest and most popular games within the game, a quick-start guide on how to build, and an overview of the Roblox Studio Tabs--the toolbox for developing content in the game. Along with the essential content to help beginners dive into Roblox like pros, dozens of full-color gameplay photos will help readers navigate the grand world of Roblox and get them mastering and creating their own Roblox games in no time!

The first official book released by the Federal Aviation Administration (FAA) for the sole purpose of glider and sailplane instruction and knowledge, this book answers all the questions related to glider flying and soaring found in the FAA's required knowledge exams for pilots. Included is detailed coverage on decision making, aerodynamics, aircraft performance, soaring weather, flight instruments, medical factors, communications, and regulations, all in relation to the world of glider flying. Through full-colour graphics and detailed descriptions, pilots are better able to comprehend and visualise the manoeuvres within the book. Explores the engineering challenges behind building rockets, as well as the creative solutions found to overcome those challenges. Accessible text, vibrant photos, and an engineering activity for readers provide a well-rounded introduction to the engineering process.

You don't have to be a genius to create these ingenious contraptions, you just need rubber bands, glue, paperclips, and Rubber Band Engineer, of course. Shooting far, flying high, and delivering way more exciting results than expected are the goals of the gadgets in Rubber Band Engineer. Discover unexpected ways to turn common materials into crafty contraptions that range from surprisingly simple to curiously complex. In vivid color photos, you'll be guided on how to create slingshot rockets, unique catapults, and even hydraulic-powered machines. Whether you build one or all 19 of these designs, you'll feel like an ingenious engineer when you're through. Best of all, you don't need to be an experienced tinkerer to make any of the projects! All you need are household tools and materials, such as paper clips, pencils, paint stirrers, and ice pop sticks. Grab your glue gun, pull out your pliers, track down your tape and paper clips, and get started on the challenging, fun, and rewarding journey toward becoming a rubber band engineer.

Calling all future Amelia Earharts and Chuck Yeagers—there's more than one way to get off the ground. Author and physics teacher Bobby Mercer will show readers 35 easy-to-build and fun-to-fly contraptions that can be used indoors or out. Better still, each of these rockets, gliders, boomerangs, launchers, and helicopters are constructed for little or no cost using recycled materials. The *Flying Machine Book* will show readers how to turn rubber bands, paper clips, straws, plastic bottles, and index cards into amazing, gravity-defying flyers. Learn how to turn a drinking straw, rubber band, and index card into a Straw Rocket, or convert a paper towel tube into a Grape Bazooka. Empty water bottles can be transformed into Plastic Zippers and Bottle Rockets, and ordinary paper can be cut and folded to make a Fingerrangs—a small boomerang—or a Maple Key Helicopter. Each project contains a material list and detailed step-by-step instructions with photos. Mercer also includes explanations of the science behind each flyer, including concepts such as lift, thrust, and drag, the Bernoulli effect, and more. Readers can use this information to modify and improve their flyers, or explain to their teachers why throwing a paper airplane is a mini science lesson. Bobby Mercer has been sharing the fun of free flight for over two decades as a high school physics teacher. He is the author of several books and lives with his family outside of Asheville, North Carolina.

****Winner of the 2016 Creative Child Magazine Product of the Year Award**** Kids will love to fold and fly these sturdy, aerodynamic paper airplanes! In this brand new origami book with folding papers, paper airplane expert Andrew Dewar presents his ultimate collection of easy-to-fold, high-performance planes for kids who are fascinated by paper or origami airplanes. These planes are brightly colored and designed to fly beautifully each and every time. The book opens with a fascinating primer to the principles of flight so kids can learn about the forces that enable a plane to fly and affect the performance of their planes. They'll have fun coaxing the planes through their paces: doing loops, barrel rolls, glides and dives. The sky is the limit once they understand how planes interact with the atmosphere! This paper airplanes kit contains: 12 innovative designs 48 pre-cut paper airplane models Detailed instructions for each paper plane Special durable lightweight cardstock Printed folding lines for perfect folds Colorful and realistic designs A pull-out airport runway for landing maneuvers

Provides step-by-step instructions for folding paper airplanes at four increasing levels of difficulty, beginning with a simple dart, and includes flying tips, techniques, and terms.

From the smallest gnat to the largest aircraft, all things that fly obey the same aerodynamic principles. *The Simple Science of Flight* offers a leisurely introduction to the mechanics of flight and, beyond that, to the scientific attitude that finds wonder in simple calculations, forging connections between, say, the energy efficiency of a peanut butter sandwich that fuels your body and that of the kerosene that fuels a jumbo jet. It is the product of a lifetime of watching and investigating the way flight happens. He covers paper airplanes, kites, gliders, and human-powered flying machines as well as birds and insects, explaining difficult concepts like

lift, drag, wing loading, and cruising speed through many fascinating comparisons, anecdotes, and examples. Equations, often the best shorthand to explain and connect phenomena, are integrated seamlessly into the flow of the text in such a way that even math-phobic readers should not be put off. Tennekes begins with a simple comparison of the relative fuel consumption of hummingbirds, cars, and airplanes, then turns to the relations between an airplane's weight, its wing area, and its cruising speed. After showing that it is possible to collect data on all flying creatures and flying machines in a single "Great Flight Diagram", he looks at energetics through the considerable efforts of a little 35-gram bird in a wind tunnel. There are stories on the effects of headwinds, tailwinds, and weather conditions on both birds and planes, on the elegance of the mechanics that makes flight possible, and on the aerodynamics of sophisticated flying toys.

Do helicopters need more or less energy to stay in the sky than an airplane? What pushes a rocket to leave the atmosphere? Why can airplanes have smaller motors than helicopters? Help your students learn the answers to these and other questions! Written for educators, homeschoolers, parents--and kids!--this fully illustrated book provides a fun mix of projects, discussion materials, instructions, and subjects for deeper investigation around the basics of homemade flying objects. With the projects in this book, you can spend more time learning and experimenting, and less time planning and preparing. Complete with download links to PDF templates that expand your teaching, this is your one-stop manual for learning about, interacting with, and being curious about airflow, gravity, torque, power, ballistics, pressure, and force. In *Make: Planes, Gliders, and Paper Rockets*, you'll make and experiment with: Paper catapult helicopter--add an LED light for night launches! Pull-string stick helicopter Rubber band airplane Simple sled kite 25-cent quick-build kite Air rockets with a parachute or a glider Foam air rocket Rocket stands Bounce rocket Low- and high-pressure rocket launchers

Guinness World Record holder John Collins teaches you how to make his world record plane. Instructions for all of the paper airplanes from his world renowned paper airplane show are included, along with internationally award winning designs.

Suitable for ages 3-7, this book combines the fun of coloring with the thrill of folding and flying paper airplanes. Two copies of a dozen different themes include princess planes, jungle jets, and other playful motifs.

All Kinds of Planes is your eye in the sky for some of the wildest, most imaginative aircrafts you've ever seen! Welcome to the wacky world of planes--from fighter jets to hot air balloons and hang gliders, there's just about every kind of air transportation you can imagine flying, both real and imaginary. Swedish illustrator Carl Johanson's fun follow-up to All Kinds of Cars will have kids giggling over the craziest kinds of imaginary airplanes, all the while learning about real aircraft and seeing their many shapes, sizes, and colors.

This riveting nonfiction picture book biography explores both the failures and successes of self-taught engineer Emma Lilian Todd as she tackles one of the greatest challenges of the early 1900s: designing an airplane. Emma Lilian Todd's mind was always soaring--she loved to solve problems. Lilian tinkered and fiddled with all sorts of objects, turning dreams into useful inventions. As a child, she took apart and reassembled clocks to figure out how they worked. As an adult, typing up patents at the U.S. Patent Office, Lilian built the inventions in her mind, including many designs for flying machines. However, they all seemed too impractical. Lilian knew she could design one that worked. She took inspiration from both nature and her many failures, driving herself to perfect the design that would eventually successfully fly.

Illustrator Tracy Subisak's art brings to life author Kirsten W. Larson's story of this little-known but important engineer.

Anyone can recycle a plastic bottle by tossing it into a bin, but it takes a bit of skill to propel it into that bin from 500 feet away. Skill, and a copy of *Soda-Pop Rockets*. Author and engineer Paul Jarvis has designed 20 different easy-to-launch rockets that can be built from discarded plastic drink bottles. After learning how to construct and fly a basic model, readers will find out new ways to modify and improve their designs, including built-on fins, nosecones, and parachutes that enable a rocket to float safely back to earth. More complex designs include two-, three-, and five-bottle rockets, gliding rockets, long-tail rockets, cluster rockets, whistling rockets, ring-finned rockets, and a jumbo version made from a five-gallon water-cooler tank. Clear, step-by-step instructions with full-color illustrations accompany each project, including how to build a launch pad, along with photographs of the author firing his creations into the sky. For those determined to find an educational benefit to their tinkering, these rockets are a clear demonstration of Newton's Third Law. Soda-bottle rockets can even be used as science fair projects by budding engineers. You don't have to be a rocket scientist to build them, but who knows what career path you'll take after you do?

Kids will love to fold classic origami projects and learn about Japanese culture with this easy origami kit. Origami, the ancient Japanese method of folding paper into 3D objects, is an exciting way for kids to expand their knowledge of the world. Renowned origami author Michael G. LaFosse has designed these paper folding projects specifically to introduce kids to the joys of origami while also learning about Japanese culture. The simple, easy-to-follow origami book in this kit teaches kids how to make traditional Japanese Good-Luck Boxes, Lotus Blossoms, Koi Fish, Cranes and many other models while learning this traditional Japanese craft! The 12 projects range from simple to slightly challenging—perfect for all children of ages and skill levels from beginning to intermediate. The beautiful designs are simple to create and fun to play with or display. This origami for kids kit contains: 48-page, full-color book Clear step-by-step instructions 12 origami projects 72 double-sided origami papers in 12 different patterns and colors 20 practice dollar bills

In this book Kyong Hwa Lee combines the art of origami and the science of flight to create unique paper airplane designs for aviation enthusiasts of all ages. Featuring thirty-two designs, *Amazing Paper Airplanes* showcases models resembling real-world aircraft, including the F-22 fighter jet, a P-51 World War II plane, the Convair F-102 Delta Dagger—the first supersonic delta-wing interceptor airplane of the US Air Force—and more. For these models, Lee provides information along with an image of the real plane to encourage interest in aerospace technology. Every design has been flight-tested and presents complete step-by-step folding instructions. In addition to showing basic and advanced folding techniques

and providing templates for each plane, the author explains the theory behind flight and offers tips to fine-tune paper airplanes for optimal flying.

Most lifting bodies, or "flying bathtubs" as they were called, were so ugly only an engineer could love them, and yet, what an elegant way to keep wings from burning off in supersonic flight between earth and orbit. Working in their spare time (because they couldn't initially get official permission), Dale Reed and his team of engineers demonstrated the potential of the design that led to the Space Shuttle. Wingless Flight takes us behind the scenes with just the right blend of technical information and fascinating detail (the crash of M2-F2 found new life as the opening credit for TV's "The Six Million Dollar Man"). The flying bathtub, itself, is finding new life as the proposed escape-pod for the Space Station.

"A collection of two dozen easy-to-fold paper airplane designs (using no cutting or glue), as well as innovative theories of flight. Includes the author's Guinness World Record-breaking airplane as well as 16 tear-out model planes"--

The 10 best paper airplanes you've ever folded and flown! These are high performance, blow-the-competition-away flying paper machines! The book features 10 designs and 40 sheets of full colour, flight-ready paper. Best for children over 7 years.

Provides information on the principles of aerodynamics, suggestions for designing airplanes, and instructions for folding paper planes and doing stunts and playing games with them.

You don't need kids to tell you that Making is Fun. Just get them in a room with simple projects, common household tools and utensils, inexpensive supplies, and their imagination. This book offers five flight projects that are easy to build, inexpensive, and expandable -- just add imagination!

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