





steps to a quieter PC. Geared Up Use a gunbelt and leg holster to hold your gear. Boost Your Signal Improving MyFi XM satellite radio reception. The World As Your Canvas Use GPS to create giant-sized works of art. Circuit Quiz Game Teach kids about circuitry in 30 minutes. iSight Tripod Mount Point your webcam anywhere you want. The Fauxlance Photographer How to get VIP treatment by dressing the part of a pro photographer. Ten Dollar Pseudoscope See everything inside out through this classic optical instrument. Citizen Weather Station Collect meteorological data on your roof and donate it to science. Launching Light Portable, collapsible model rocket launch pad. Firefly Meter Bioluminescence detector lights way toward insect-cyborg pollution sensor. Legal And Free Digital Satellite TV Use a long-obsolete Primestar dish to pull in a wide world of programming. Digital TV On The Cheap You can get many of the benefits of Digital TV (DTV) for as little as 20 bucks, if you're willing to do a little tinkering. Full Mast Reception Build your own satellite dish mast in three easy steps. Dumpster Cornucopia Reusing components from discarded electronics. Theory & Practice: IR Remote Control Protocol by Bunnie Huang Get an infrared remote to turn your room lights on and off. Sensor Interfaces How circuits communicate with the outside world. Computers in the Machine Emulation software gives you free, zero-footprint, vintage computers. Digital Video Production: Create Explosive Visuals Real movie explosions are dangerous, expensive, and usually unnecessary. MAKE VOL.06 Tones Dem Tones, Damn Ringtones Shouldn't people make their own ringtones, not buy them? Ship of Cards Popular card games become an exercise in miniature construction. Space Cases The balloon men at NASA's Jet Propulsion Laboratory. Totch Brown's Pit Pan Gator Boat Start your boat-building hobby by building this one. A Beginner's Guide to BEAM b The BEAM design approach creates nimble robots from simple components, with no programming required. Panzeroids Become a desktop general with these battlin' bot tanks. Bots in a Snap The nuts and bolts of Lego robot design. Cogs and Cocktails Meet the drink-serving, drunk-driving droids at Roboexotica. The Vex Robotics Design System Versatile, powerful design raises the bot in prefab robotics construction kits. Mini Mars Rover A wireless remote control camera on wheels. Hot Air by Mister Jalopy in The Quick and Dirty Build a do-everything manifold to control, dry, route, and use compressed air. Two BEAMbots: Trimet and Solaroller Solder together one simple circuit and use it to control two very different solar-powered robo-critters: a little satellite that scoots and bumps around, and a mini cart that just keeps a-rolling until the sun goes down. Soccer-Playing Robot Make an autonomous robot that can chase a ping-pong ball, push it into a goal, and take other programmable actions. When you're finished, you'll have a few more wrinkles in your brain and no more fears of robot attacks. Building Tensegrity Models Make a "needle tower" sculpture from dowels and elastic cord that seems to defy the laws of physics. LED Throwies Make and toss a bunch of these inexpensive little lights to add color to any ferromagnetic surface in your neighborhood. It's Email Time Innocent-looking "clock" monitors the unread-message pileup in your inbox. Rumble Mouse For FPS gaming, a cellphone vibrator gives a kick to your clicks. Video Podcasting Producing TV shows on the cheap. Da Xerox Code How to read the tracking dots in your color Xerox printer. Let There Be (Front) Light Add an LED front light to your Game Boy Advance for \$5. Sticky Fingers Modifying tech for pre-mouse toddlers. Homecasting Digital Music Good old FM beats wi-fi for sending streamed music around your house. Born-Again Boomboxes Up from the ghetto blaster, a new life as a functional-art

stereo component. Run, Lala, Run A rodent-powered nightlight. Spider Rifle Humane, compressed-air-powered bug trapper. 3D Photography Taking stereographs is easier and more fun than ever. Macro Photography On a Budget Pringles-can lens extender produces dazzling ultra close-ups for peanuts. \$130 Digital Picture Frame Build one in 15 minutes. The Secrets of Monitoring Atmospheric Haze Make a measuring instrument with an old video case and \$20 worth of parts. RFID for Makers by Joe Grand Build this kit to read radio frequency ID tags. The MAKE Controller Announcing a just-maybe-revolutionary microcontroller for all things DIY. MakeShift by Lee D. Zlotoff The creator of MacGyver challenges you to survive an earthquake, a flood, and a hungover neighbor. Roomba Tronic by Phillip Torrone Take a tour into the underground robotic relentlessness of Roomba hacks, robots in the streets of Austin, and robot cockfighting. Off-the-Shelf Parts, Off-the-Wall Ideas by George Dyson Looking for the dawn of the digital universe? Check in the basement, next to the lavatory. My Version of Einstein's Amplifier Tyler Rourke tells how he built a replica of a hi-fi system built by Jack Rosenberg for Albert Einstein's 70th birthday gift. MAKE: VOL.07 Penny-Powered LED Power an LED with some salty water and \$1.21. Shopping Cart Chair by Tim Anderson in Heirloom Technology Turn a shopping cart into a comfortable and stylish wheelchair. Digi-Comp Redux A maker in the middle recreates a kit classic. Magnetic Switches from Everyday Things Control many devices from afar with the magnetically sensitive Sneaky Switch. Arduino Fever The tale of a cute, blue microcontroller that fits nicely in the palm of your hand, and the expanding community of developers who love and support it. Life and Death at Low Temperatures b How to freeze and revive a garden snail. A Sublime Machine Mike Wilder makes Lego robots for time-lapse 3D videos of carnivorous plants. Kitchen Counter DNA Lab Extract, purify, and experiment with the blueprint of life. Home Molecular Genetics Extract, fingerprint, and replicate your own DNA. Hack Your Plants! Play God in your garden--create custom fruits, flowers, veggies, and more. Rocket-Launched Camcorder Hack a \$30, single-use camcorder to make it reusable, then launch it up in a model rocket and capture thrilling astronaut's view footage of high-speed neighborhood escape and re-entry. The Two-Can Stirling Engine b The Stirling engine has long captivated inventors and dreamers. Here are complete plans for building and operating a two-cylinder model that runs on almost any high-temperature heat source. Home Mycology Lab Use an off-the-shelf home air purifier to make a laminar flow hood for your own miniature mycology lab. Then use it to culture and grow mushrooms, and to perform other experiments that require a clean-room environment. Head-Mounted Water Cannon Use steel fire-extinguisher power to pummel plastic squirt toys. Weatherproof Wi-Fi Access Point b Outdoor router with minimal coaxial run maximizes network range. Convertible Jockey Box Portable cooler taps and dispenses ice-cold beer from both kegs and mini-kegs. Beepkiller: Parental Revenge Three ways to silence annoying toys. iPod Video Converter Cable An easier way to watch iPod video on your TV. Automate Your Voicemail Greeting Program Asterisk to daily update your outgoing message in your own voice. USB-Powered Fan 12 easy steps to a cooler you. Thumb Life USB keydrive lets you listen to, read, and play what you want on any machine. El Cheapo Cantenna "Mountain Grown" coffee can makes homegrown wi-fi range extender. Backup Power To Go 9V battery USB-compatible charger juices up portables in a pinch. Palm Pilot Notebook Modified hardback book contains extra-powered PDA and travel keyboard. Scribbler Bot Homemade two-axis plotter finds work as a caricature

artist. How to Drink Beer on C-SPAN Put yourself into somebody else's video. Monster MIDI Detector Here's an easy-to-build MIDI detector packaged in a small Japanese action figure. Duct Tape and Cyclotrons Incredible machines at the Lawrence Berkeley National Laboratory. MakeShift by Lee D. Zlotoff The creator of MacGyver challenges you to save a man stuck in a fissure filled with toxic gas. Digital Spelunking Unearthing ancient Apple II files on AOL. Strange Love by George Dyson Or, how they learned to start worrying and love to hate the bomb. My Robosapien in a Can High-Flying Video from Rocket-Launched Camcorder MAKE Vol.08 Custom Travel-Game Mod Make a travel edition of your favorite, and otherwise housebound, board game. Heavy Lifting Placing huge towers up a mountain is just the start to reaching Troy Caldwell's ski-resort-on-a-budget dream. Charlie Asquith's Jet Dory Charlie is 78 years old and he'd been fishing for mullet in Hawks Nest, Australia, for over 60 years. Homebrew Magnetometer Build a torsion balance to measure tiny changes in the Earth's magnetic field. Shaker Flashlight Power Source Powering small electronics with your muscles. Homebrew Game Design Turning wacky ideas into fun board games. The Secret History of MYST Co-creator Robyn Miller reveals why it became the best-selling adventure game of all time. 1966: A Big Year for Games An afternoon with Ralph Baer, the "Father of Video Games." Photos from the Inside Toys sent through the X-ray machine give new insights. Pinball Restoring a crusty, beat up Cyclone and going inside the electromechanical underground. Chris Ware's ACME Papercraft Comics you can build! Tabletop Terrains That's no pile of trash; it's my asteroid mining colony! Making Your Own Video Game Microsoft's XNA Game Studio Express opens up game development. Pummer, Dude! Part robotic plant life, part techno-sculpture, these desktop toys are easy and fun to make. Roachball Goes Open Source In this fast-paced lunch-hour sport, changing the rules is part of the game. Building an Ornithopter For millennia, men and women have studied birds, bats, and beetles, observing and experimenting, attempting to determine what humans must do to fly by flapping. Killing Time Hack a retro gaming light gun with some tilt switches to control a vintage digital clock radio. After the alarm wakes you up, you can grab the gun and kill it off. Isn't that what you've always dreamed of doing? Coffee Roaster Lots of folks think that quaffing a cup of coffee from boutique beans comes close to nirvana, but roasting your own beans will bring you even closer. That's why I call this roaster the Nirvana Machine. Streamerator 2000 This favorite stage prop launches streams of toilet paper into mid-air, or can completely mummify someone in the front row. TV-to-Synth Interface Triggering sound from video images. World's Loudest iPod iBump crossover lets you crank it up without distortion. Project Redshark Turn your Xbox into a mobile media monstrosity. My Love Affair with LEDs Build a bright, low-powered desk lamp TV Spinner Motorized lazy Susan aims the screen where it's needed. Smart HVAC Energy-efficient A/C knows when you're in the room MIDI Controller Monkey A/V monkeyshines with flex sensors and a MIDI sense board Clean Out a Dishwasher Salvaging components from unwanted appliances. How Not to Make a How-To Video Ignore these handy rules and your instructional video will turn out great! Van TV b Big sights and sounds hit the streets. Quick and Dirty Light Table A storage bin, a pane of glass, and fluorescent light saves hundreds of dollars Moldmaking by Adam Savage How the pros replicate objects Gaming on the EDSAC and PDP-1 From the earliest computers came the first computer games Blast from the Past: The 1948 Union Hardware Catalog Old catalog provides a glimpse of how modern civilization was built







