

Contents

06 SPARK

- 06 Top Projects**
The Louvre of DIY projects
- 16 Objet 3d'art**
Feast your eyes on 3D printed beauties
- 18 Consumer Electronics Show**
The most intelligent toys from CES
- 22 Columns**
On the patterns that shape our electronics
- 24 Letters**
More requests (and a bit of showing off)
- 28 Hackspace Nottingham**
A community owned and run Hackspace

31 LENS

- 32 Scavenging Electronics**
Rescue old bits of equipment and make them useful again
- 42 How I Made: A Chicken Door**
Follow the build of an automated poultry portal
- 46 Humanitarian Makers**
3D printing for the developing world
- 54 Interview Farm Urban**
Open source DIY science that's safeguarding our food
- 62 Improvisor's Toolbox Glue Gun**
Why there's more to glue than sticking things together
- 66 We Learn Belt Making**
Get started working with leather



123

06



46



18

75 FORGE

- 76 SoM Metalwork**
Build a silver-soldered toolbox
- 82 SoM Coding For Arduino**
Reading data from devices
- 86 Tutorial Food Stencilling**
Make unique decorations for cakes/steaks
- 88 Tutorial Internet Counter**
Keep count of big numbers on the internet
- 92 Tutorial Build a Drone Racetrack**
Track flying drones with lasers and woodwork
- 98 Tutorial 3D Printing**
Print designs directly on to fabric
- 102 Tutorial Oscilloscope**
Interpret wavy lines on a glowing screen
- 106 Tutorial ESP8266 Rangefinder**
Build a location scanner LIKE IN ALIENS!!

113 FIELD TEST

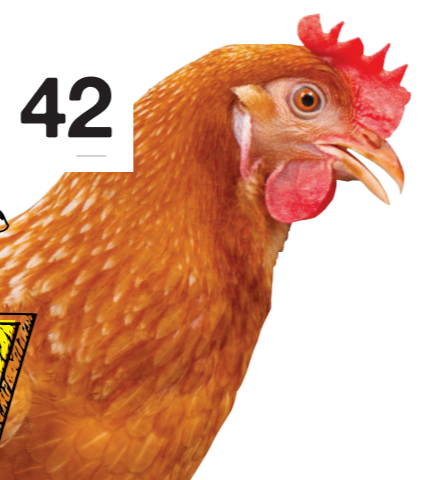
- 114 Direct from Shenzhen Mechanical Keyboard**
Customise the clickiness of your input device
- 116 Best in Breed**
Vector drawing tools to power your laser cutter
- 120 Can I Hack It?**
Hackers don't shoot people: Nerf guns do
- 122 Review Squix**
A programmable e-paper display right out of the box
- 123 Review Leatherman Surge**
The granddaddy of all-in-one multi-tools
- 124 Review SparkFun Inventor's Kit**
Want to get started with electronics? Start here!
- 126 Review ElectroSmash Pedal Pi**
Programmable guitar effects to learn while you rock
- 128 Review Coinkite Opendime**
Make secure Bitcoin purchases in person
- 129 Book Review Much Ado About Almost Nothing**
A history of electronic geekery



102

32

SCRAP HEAP HACKING



42

54

Some of the tools and techniques shown in HackSpace Magazine are dangerous unless used with skill, experience and appropriate personal protection equipment. While we attempt to guide the reader, ultimately you are responsible for your own safety and understanding the limits of yourself and your equipment. HackSpace Magazine is intended for an adult audience and some projects may be dangerous for children. Raspberry Pi (Trading) Ltd does not accept responsibility for any injuries, damage to equipment, or costs incurred from projects, tutorials or suggestions in HackSpace Magazine. Laws and regulations covering many of the topics in HackSpace Magazine are different between countries, and are always subject to change. You are responsible for understanding the requirements in your jurisdiction and ensuring that you comply with them. Some manufacturers place limits on the use of their hardware which some projects or suggestions in HackSpace Magazine may go beyond. It is your responsibility to understand the manufacturer's limits.