Contents



Top Projects Great things made by great people

Objet 3d'art Perfection in hot plastic

Digital Making at Home Young people: log on and learn!

Meet the Maker Learn to fail = learn to make better

Column Get out into the wild green yonder

32



DIY Smart Home Build a bespoke, secure IoT at home

How I Made: Seven-segment clock Salvaged electronics, mahogany, Arduino, and ESP

In the workshop: Car stereo hacking Take old gear apart to give it new life

Interview: Kyle Wiens The founder of iFixit on repair, tinkering, and ownership

Improviser's Toolbox: PVC pipes Make unique things from standard plumbing parts



(without all the tech bro rubbish)

with CNC for paper

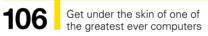




Make pop-up greetings cards









100

We're fighting a war against the universe. Are you in?

FORGE SoM CircuitPython

Draw analogue-style gauges with real data

SoM Bench blocks Grip work more securely with homemade tools

SoM 3D printing Everything you need to know about using PETG

Tutorial Maker maths The quick calculations you need to make better

Tutorial Pop-up card making Use a vinyl cutter to build paper designs

Tutorial Pallet clock Create a timepiece with reclaimed wood

Tutorial Tinkercad Design and print a medieval-themed planter

Tutorial CMOS music Build a low-voltage pluggable synth

FIELD TEST

Best of Breed Build your own fun with maker kits

106 Can I Hack It? A beige, nicotine-stained Commodore 64

108 Review Pimoroni Enviro+ Wing Add environmental testing to your Feather setup

110 Review Raspberry Pi HQ Camera A huge upgrade on your old Raspberry Pi Camera Module

CONTENTS

110

112 Review Ultimate Box Maker 3D-print enclosures for your next project

113 Book Review Micro:bit for Mad Scientists Projects and experiments for techie kids

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, our 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.

HackSpace **Hack**Space