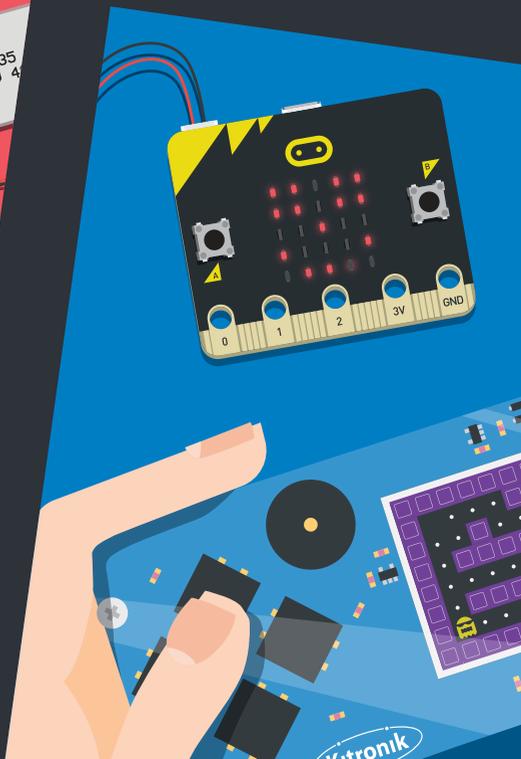
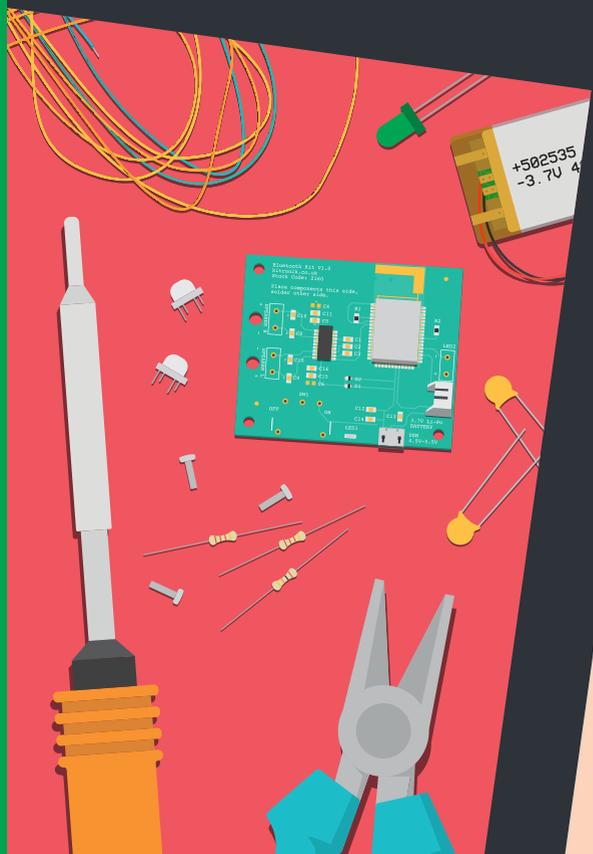




CATALOGUE 2020/21

DESIGN & TECHNOLOGY,
MATERIALS & COMPUTING



WELCOME TO KITRONIK

Kitronik create high quality products and resources for education and makers.

Kitronik aims to inspire and engage people of all abilities, to further their knowledge of coding and design by offering a well-designed, well manufactured product range and free resources. All backed by detailed product descriptions, knowledgeable staff and fast delivery.

ORDERING

Please quote stock codes on all orders.

Post to: Kitronik Ltd,
Unit 12a, Glaisdale Point,
Glaisdale Parkway,
Nottingham, NG8 4GP

VAT: All prices exclude VAT which should be added at the current rate.

Accounts: All educational establishments have automatic account facilities.

Phone: 0845 8380781 or 0115 9704243
Fax: 0845 8380782
Email: sales@kitronik.co.uk
Online: Call our sales team to activate online account ordering.



DELIVERY

 www.kitronik.co.uk/delivery-info

Delivery and handling will be charged as follows:

Order value	Delivery UK Most locations	Delivery UK Northern Ireland	Delivery UK Remote locations*
Less than £40	£3.95	£3.95	£3.95
£40 - £200	Free	£12.00	£15.00
More than £200	Free	Free	Free
Special orders †	£6.50	£12.00	£18.00

* Remote locations include offshore, highlands, plus other rural areas. See website for full list. Order by 3:00pm for same day dispatch and usually next day delivery. See terms and conditions for full details.

† Acrylic, wood, cork, Polypropylene & Styrofoam orders (except A4 sheets).

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We are happy to provide you with a free sample of one of our great project kits for you to evaluate. These can be requested online or, alternatively, call our sales team. The samples service is available for any self-assembly electronic kit that is marked as exclusive to Kitronik, with the exception of high value kits. Please see the link below for the full list of samples available.



www.kitronik.co.uk/samples

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Let us take the trouble out of manufacturing your school's PCBs and you can share the volume savings we receive. For details on this service visit the link below (and try our price estimator) or alternatively call our sales team.

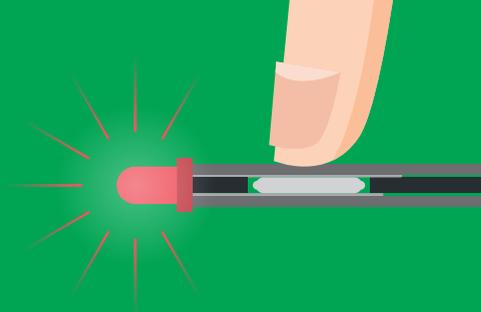


www.kitronik.co.uk/custom-pcbs

01 EASY BUILD KITS

Kits with ten parts or less, including simple torches, USB lights, a bike light, steady hand games and more.

PAGE 06



02 INTERMEDIATE KITS

Kits that are more complex and normally include an IC, featuring a range of amplifiers, FM radio, solar light, a record playback kit and more.

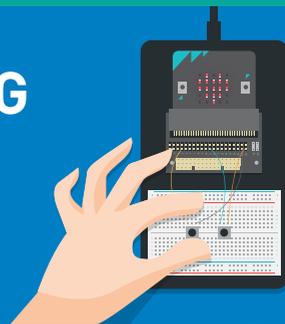
PAGE 30



03 BBC micro:bit & CODING

Coding products and projects, including the BBC micro:bit & accessories, Arduino, PIC project boards and PICAXE® kits, chips & cables.

PAGE 58



04 OTHER KITS & MODULES

Featuring buggy kits, solar projects, modules, breakout boards, clocks and more.

PAGE 110

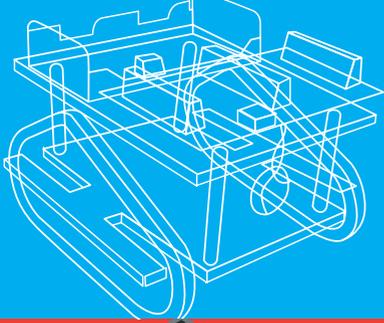


05 E-TEXTILES

Add electronics to your textiles project with Electro-Fashion sewable electronic kits & parts, plus Igloo modules and boards.

PAGE 120

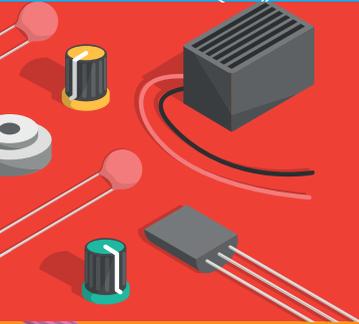




ROBOTICS 06

Includes servos, motors & accessories, gearboxes, wheels, casters, chassis, propellers and more.

PAGE 134



COMPONENTS 07

Featuring batteries & holders, power supplies, connectors & cables, resistors, capacitors, optoelectronics & LEDs, audio accessories, switches and more.

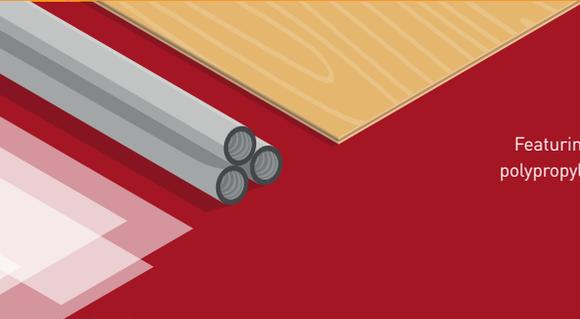
PAGE 144



TOOLS & TEST EQUIPMENT 08

Including soldering irons, solder, wire cutters & strippers, screwdrivers, multimeters and lab supplies.

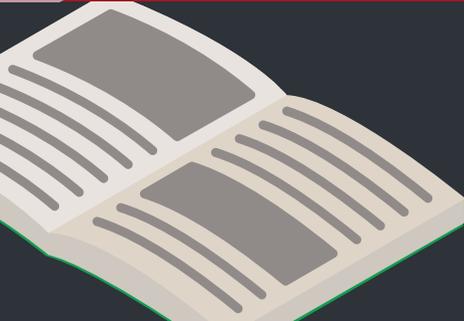
PAGE 184



MATERIALS 09

Featuring many different types of Perspex, plus PVC, HIPS, polypropylene, laser foam, plywood & MDF sheets and more.

PAGE 194



RESOURCES

Find your perfect product with our Kit Selector and Index. Also features our T&Cs and Quick Reference Guide.

PAGE 230

01

EASY BUILD KITS

SECTION CONTENTS

Dark activated colour changing LED kit	07
Learn to solder kit	08
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Coin cell power board	09
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Easy build timer project kit	27
Steady hand game kits	28 - 29



Kitronik

DARK ACTIVATED COLOUR CHANGING LED KIT



The colour changing LED in this kit is automatically illuminated and starts to cycle through various patterns when the light sensor has detected that it's dark.

The kit is based on the light activated board, but this kit is also supplied with a colour changing LED, battery clip & battery cage.



Requires 4x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2120	£2.80	£2.15	£1.75	£1.66	£1.58

* Price shown includes bulk buy discount



ALSO SEE

Timed night light kit on [page 43](#).



TEACHING NOTES



www.kitronik.co.uk/teach

Where you see the scroll symbol (as above) the kit is supported by comprehensive teaching notes on our website. These comprise of printable resources, covering activities from design brief to evaluation.

These can include manufacturing an enclosure, build instructions for the project, debugging the project, and explanations of how it works. This wealth of information will make your lesson planning easier as we try to do the hard work for you.



BULK BUY DISCOUNTS

Where you see the star symbol (as above) the kit is eligible for additional bulk discounts, when you are buying 200 or more Kitronik project kits.

Different kits can be mixed to give the required quantity. The additional discount will be applied to appropriate price break for the quantity of each kit purchased.

ORDER
200+ KITS
5% OFF*

ORDER
300+ KITS
10% OFF*

* the 50+ price

LEARN TO SOLDER LED KIT – PACK OF 25



The perfect way to introduce soldering to a class. Four resistors and one LED gives ten easy solder joints to practice on, and introduces the concept of component orientation.

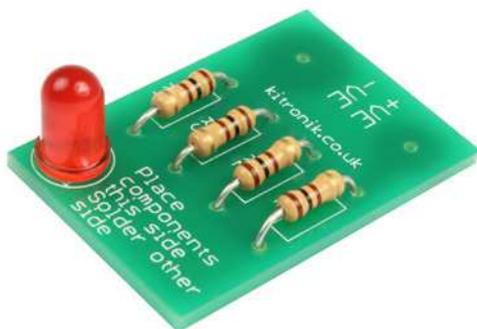
Once built, students can check their circuit by touching the PCB to the 9V battery (supplied). With the addition of a battery snap, students can take home their own basic torch.

i This kit is supplied as a pack of 25 and requires soldering.

£ Just **40p per student!**

The kit contains:

- 25 x PCBs.
- 100 x 100Ω Resistors.
- 25 x Red LEDs.
- 1 x 9V PP3 Battery.



^ The contents of the pack.



^ Testing the PCB board with the 9V PP3 battery.

< The completed PCB board.

Description	Code	1+	5+
Learn to Solder LED Kit – Pack of 25	2163	£10.00	
Standard PP3 clip leads – Pack of 25	2257-25	£2.25	
PP3 battery – Pack of 10	2211-10	£5.00	£4.50

VIBROBUG



This Vibrobug is supplied in kit form and requires a small amount of soldering as well as some mechanical assembly. A coin cell powers a small off centre motor which vibrates the whole body of the bug and causes it to move around a table.

The kit contains:

- A pre-cut piece of Perspex containing the bug parts.
- A miniature 3V vibrating motor.
- A coin cell power board kit.
- A set of fixings (4 nuts & bolts).
- A coin cell battery.



BULK BUYING

Download cutting files and parts list from www.kitronik.co.uk/vibrobug

Colour	Code	1+	5+
Red	2150	£7.50	£6.85
Black	2151	£7.50	£6.85



↖ Example of kit powering bike light

COIN CELL POWER BOARD KIT



A compact 3V power source with an on/off switch. Batteries are included, so with a small amount of soldering you can deliver 20mA current to power kits like our bike light or easy build timer.

Includes coin cell battery.

This kit is supplied as a pack of parts and requires soldering.

Code	1+	5+	50+	200+*	300+*
2145	£1.90	£1.45	£1.35	£1.28	£1.22

* Price shown includes bulk buy discount



↗ Example of a lamp made using the kit.



LOOKING FOR OUR MATERIALS SECTION?

Skip forward to **page 194**.

COLOUR CHANGING MOOD LIGHT – 60 PACK

KS
3

This simple but effective mood light requires no soldering, making a simple electronics kit with a power source, switch and LED. At less than £1 per student it is a very economical and simple starter in electronics. It is just a case of connecting a three AA battery box with integral switch to the LED using a terminal block.

Combine with a diffusing material, such as polypropylene, to create simple but impressive designs.

- i** This project includes:
- 60 x battery box with switch.
 - A pack of terminal blocks.
 - 60 x colour changing LEDs.



Requires 3x AA batteries, available separately.

Description	Code	1+	10+
Colour changing mood light - 60 pack	2172	£59.95	£53.95

LIGHT OR TEMPERATURE SWITCH PROJECT KIT



This kit is available in two variations, either as a light activated switch or as a temperature activated switch. The output of the board can be used to control other electronic circuits, automatically turning them on when it either becomes light, dark, hot or cold.

The board has space for an LED with current limit resistor (both available separately) which will light when the output turns on. The Darlington pair transistor configuration allows an output current of up to ½ an Amp to be controlled.



Operating voltage of 3V to 10V (lower voltages allow for better adjustment of the switching point).



Possible applications include:

- Garden light that switches on automatically at night.
- Drawer alarm, sounds when a dark drawer is opened.
- Line following robot (using 2 light activated boards).
- Babies bath over temperature indicator.
- Automatic fan.



See www.kitronik.co.uk/2112 and www.kitronik.co.uk/2113 for more information.

INPUT

Light/heat sensor



PROCESS

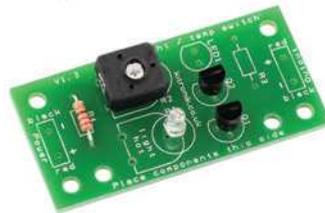
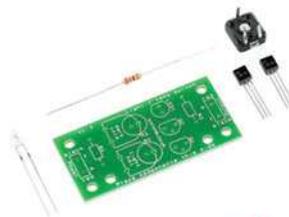
Darlington pair transistor switch



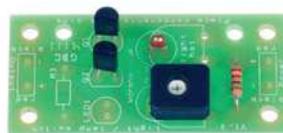
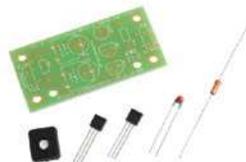
OUTPUT

Any device
(taking up to 500mA)

✓ Light switch project



✓ Heat switch project



Description	Code	1+	5+	50+	200+*	300+*
Light activated switch	2112	£1.70	£1.35	£1.05	£1.00	£0.95
Heat activated switch	2113	£2.00	£1.45	£1.15	£1.09	£1.04

* Price shown includes bulk buy discount

REAR BIKE LIGHT PROJECT KIT

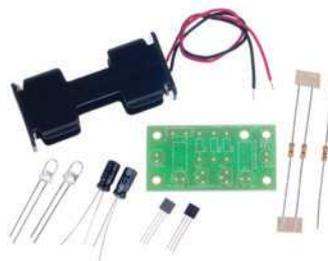


This easy build bike light kit has just ten parts, making it a good introduction to electronics. The kit uses two ultra bright red LEDs, which flash rapidly, providing a highly visible light. This makes it ideal for use as a rear bike light. Alternatively it can be used as a night safety product or flashing eyes. Some examples of student projects are shown below.

 Requires 2x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2106	£2.10	£1.50	£1.25	£1.19	£1.13

* Price shown includes bulk buy discount



PROJECT EXAMPLES - BIKE LIGHTS



AIR FRESHENER PROJECT KIT (TIMED FAN)



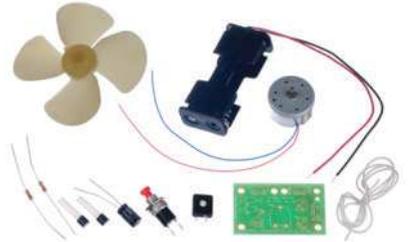
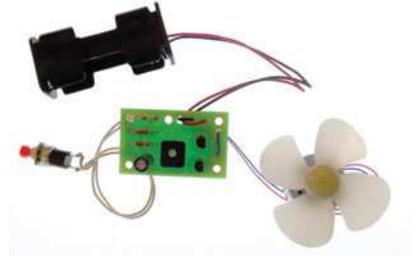
This kit uses a silent low current motor to spin a fan, making it perfect to circulate air through an air freshener containing potpourri or it can be used to move a light weight buggy. The electronics take no power in standby and when the switch is pressed the motor spins for up to 100 seconds. This time is adjustable via the on-board variable resistor.



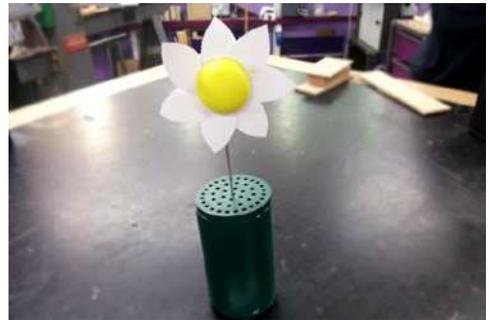
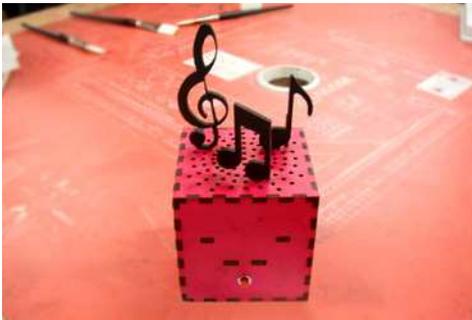
Requires 2x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2123	£3.75	£2.80	£2.55	£2.42	£2.30

* Price shown includes bulk buy discount



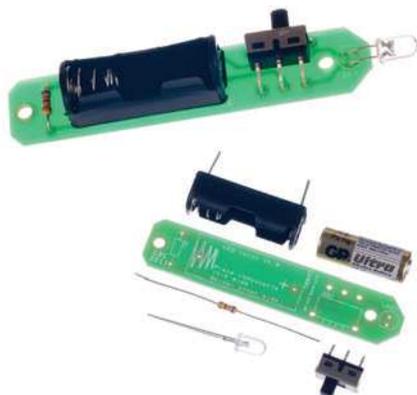
PROJECT EXAMPLES - AIR FRESHENER



WHITE LED TORCH PROJECT KIT



The LED torch uses a 5000 mCd ultra bright white LED. Power is supplied by an N size 12 Volt battery, which is included in the kit. The torch comes complete with a slide on / off switch.



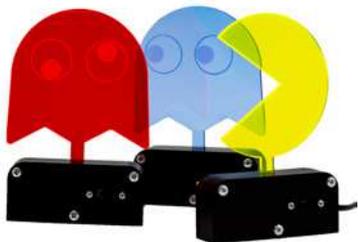
Includes battery.



With just four parts the kit makes a great introduction to electronics.

Description	Code	1+	5+	10+	50+	200+*	300+*
White LED torch project kit (inc. battery)	2114	£2.55	£1.90		£1.60	£1.52	£1.44
12V battery (in addition to that included)	2245	£0.45		£0.40			

* Price shown includes bulk buy discount



^ Light up decoration examples.

'LIGHT UP' DECORATION PACK - 10 PACK



The decoration is made by layering laser cut Perspex sheet. The centre piece uses clear Perspex illuminated by a colour changing LED. As the LED changes colour this can be seen in the edges of the plastic or in 'etched / engraved' sections. The design has been created so that the shape of the decoration can easily be altered by the student. Making it ideal for seasonal tasks such as Christmas, Easter, etc.

The pack contains all the parts required to build ten of the kits (**excluding Perspex**). You will need a solid colour for the base and a sheet of clear for the part of the decoration that is 'lit up'. See [page 194](#).



For an application note and laser cutting templates see: www.kitronik.co.uk/lightup

Description	Code	1+	5+
Light up decoration pack - 10 pack	2133	£16.00	£15.00

SQUEEZY TORCH KIT



The squeeze torch kit is an incredibly simple kit. It requires **no soldering** and can be built by people who have no electronics experience at all.

Once built, the torch is turned on by squeezing/ squashing the torch. This compresses the foam core which causes the legs of the LED to touch the battery, turning it on. The kit includes:

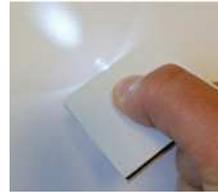
- 1 x High brightness white LED
- 1 x Neoprene foam core
- 1 x 3V coin cell
- 2 x White PVC outer covers



Includes coin cell.



Requires double sided tape (available separately).



Description	Code	1+	5+	50+	200+*	300+*
Squeeze torch kit	2148	£1.95	£1.45	£1.25	£1.19	£1.13
Double sided tape (50mm wide) - 33m roll	2673	£4.00				

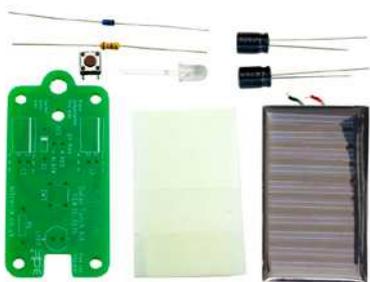
* Price shown includes bulk buy discount

PROJECT EXAMPLES - TORCH & LIGHT UP DECORATION





✓ Kit of parts.



Example of the solar torch kit in use. >



www.kitronik.co.uk/2175

SOLAR TORCH KIT

NEW!



KS
3



The solar torch is a small compact torch that uses a solar cell to charge capacitors which are then used to power the LED when the button is pressed. It is a great example of how to use solar power as a renewable energy source.

With its low part count the kit is easy to build and can be used as is, but it also offers a range of opportunities for designing a case.



Supplied as a kit of parts and requires soldering.



Description	Code	1+	5+	50+	200+*	300+*
Solar Torch Kit	2175	£4.95	£4.00	£3.75	£3.56	£3.38

* Price shown includes bulk buy discount



**LOOKING FOR
SOLAR CELLS?**

Check out **page 149**.

USB FAN KIT



This kit allows you to build an economical desk fan that takes power from a standard USB port or USB power supply (available separately, see [page 150](#)).

The kit comprises a (90mm) fan blade and motor which connect to a PCB that has a power switch, resettable fuse and resistor. The low part count means the kit is very easy to build and is a great project for people with little soldering experience. The resettable fuse prevents the circuit from drawing too much power if the motor is stalled.

 Supplied as a kit of parts and requires soldering.



✓ Kit of parts.



Description	Code	1+	5+	50+	200+*	300+*
USB Fan Kit	2162	£4.50	£3.50	£3.10	£2.95	£2.79

* Price shown includes bulk buy discount

PROJECT EXAMPLES - USB FAN KIT



See more pictures and find 3D printing resources at  www.kitronik.co.uk/2162

USB LED STRIP WITH POWER SWITCH

NEW!

This LED Strip with power switch is a board designed for low power lighting, such as desk lamps or accent lights. Its discreet size and straightforward layout make it perfect for creative lighting enclosures.

The board has a micro USB power connector and has been designed so that it is within the supply rating of a computer USB port (under 100mA). This means you can power it conveniently from a computer/laptop or a suitable power supply. The board features the power switch at one end and the micro USB power connector at the other.

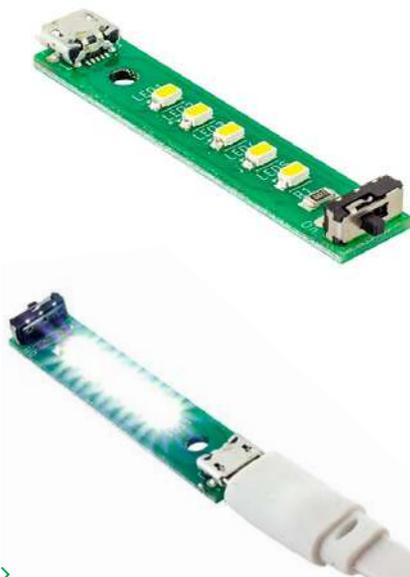
i Requires micro USB power supply or lead.

i Supplied fully assembled.

Operating voltage: 5V.

Current: 90mA.

[USB LED strip in use.](#) >



Description	Code	1+	10+	50+
USB LED strip with power switch	35150	£1.95	£1.75	£1.55

A KITRONIK **FREE** RESOURCE

BUILD A SIMPLE

STRIP BOARD EDGE-LIT PERSPEX SIGN

WITH OUR ONLINE GUIDE

www.kitronik.co.uk/deersign



5V MINI LED LAMP MODULE

This handy module provides a bright, compact light, which is easy to mount and use. It makes an excellent project with a minimum amount of soldering. The module can be powered from any 5V power source (such as those on page 21) soldered to the two power pads on the PCB. There is a hole for mounting the module in the centre of the PCB.

i Supplied fully assembled.

Voltage range: 3.6V – 5V.
Current: 56mA – 80mA.

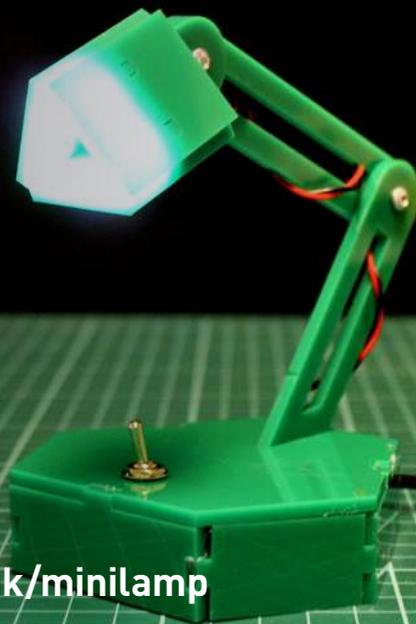


Description	Code	1+	10+	50+
5V mini LED lamp module	35137	£1.65	£1.26	£1.07

A KITRONIK **FREE** RESOURCE

BUILD A MINI LASER CUT LED LAMP

WITH OUR
ONLINE GUIDE



www.kitronik.co.uk/minilamp

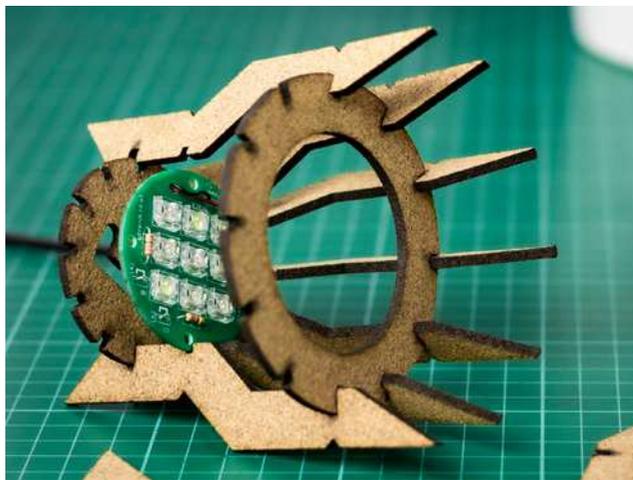
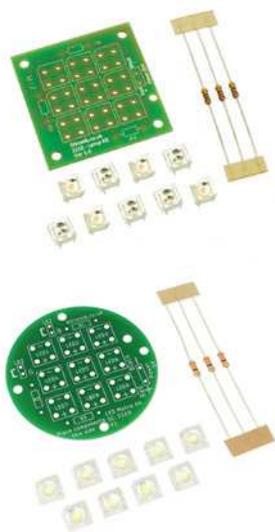
5V LED MATRIX LAMP KIT



These 5V LED lamp modules offer really bright lights, which are compact and easy to mount. Each unit is supplied with nine white superflux LEDs, which output a lot of light. The units incorporate current limiting resistors, allowing it to be run from a 5V power supply or 3 x AA batteries. It will run continuously from batteries for around 5 hours.

These modules make a nice desk lamp when powered from an old mobile phone charger, using one of our micro USB breakout boards.

i Approximate current at 5V: 180mA



◀ Kits of parts.

◀ Example of the round LED matrix lamp kit (2169) in use.

Description	Code	1+	5+	50+	200+*	300+*
5V LED Matrix Lamp Kit - Square	2155	£3.05	£1.95	£1.55	£1.47	£1.40
5V LED Matrix Lamp Kit - Round	2169	£3.05	£1.95	£1.55	£1.47	£1.40

* Price shown includes bulk buy discount

5V POWER SOURCES FOR OUR 5V LAMP PROJECTS

We make a number of projects which operate at around 5V. At this voltage you have a number of choices for powering the project. These are some of our favourites. You can find their full descriptions on our website, but with the option of being powered by either USB, battery or the mains, you are spoiled for choice. Our Mini LED Module and LED Matrix Lamps are extremely popular and pair with these products perfectly.

USB POWER LEAD



www.kitronik.co.uk/4101

Code	1+	10+	100+
4101	£0.64	£0.54	£0.50

3 x AA BATTERY CAGE WITH LEADS & SWITCH



www.kitronik.co.uk/2239

Code	1+	10+	100+
2239	£0.63	£0.55	£0.49

MICRO USB TO 5V BREAKOUT BOARD



www.kitronik.co.uk/5109

Code	1+	10+
5109	£0.95	£0.75

5V 1A MICRO USB UK MAINS WALL POWER SUPPLY



www.kitronik.co.uk/2208

Code	1+	10+
2208	£4.49	£4.25

MICRO USB LAMP KIT V2.0



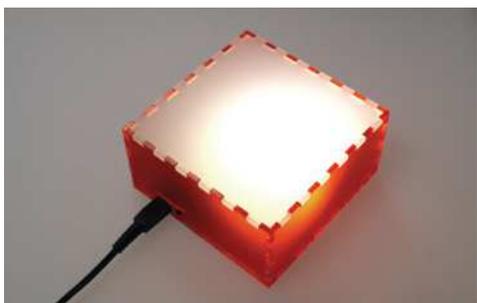
This kit allows you to build an economical mains powered lamp that takes power from a standard Micro USB phone charger (available separately). The kit comprises of a very bright 1W Power LED, which connects (with the provided cable) to a PCB that has a power switch, a Micro USB connector and a power resistor.



✓ Examples of the Micro USB Kit in use.



www.kitronik.co.uk/2161



Description	Code	1+	5+	50+	200+*	300+*
Micro USB Lamp Kit V2.0	2161	£3.85	£2.89	£2.65	£2.52	£2.39

* Price shown includes bulk buy discount

PROJECT EXAMPLES - 3D PRINTED LAMPS



www.kitronik.co.uk/3dprints



USB POWERED LAMP KIT



Build a computer desk lamp or ornament using this simple board. This kit is available in either a white or a colour changing version. The board takes power from a USB port and the light can be turned on / off with the on board switch.

The kit contains:

- 1 x USB power cable, 1m (see below).
- 1 x Right angle power switch.
- 1 x LED.
- 1 x Resistor / zero ohm link.
- 1 x USB lamp PCB.



Description	Code	1+	5+	50+	200+*	300+*
Colour changing USB lamp kit	2131	£2.50	£1.85	£1.60	£1.52	£1.44
White USB lamp kit	2132	£2.50	£1.75	£1.45	£1.38	£1.31

* Price shown includes bulk buy discount

PROJECT EXAMPLES - USB LAMP



Examples created by Year 10 students at Nottingham Emmanuel School.

To see more example pictures see our gallery at www.kitronik.co.uk/gallery



16GB USB MEMORY STICK

These 16GB USB uncased memory sticks are a perfect start for projects where students design their own case.

These products are supplied pre-assembled.

Description	Code	1+
16GB USB memory stick	4115	£3.95

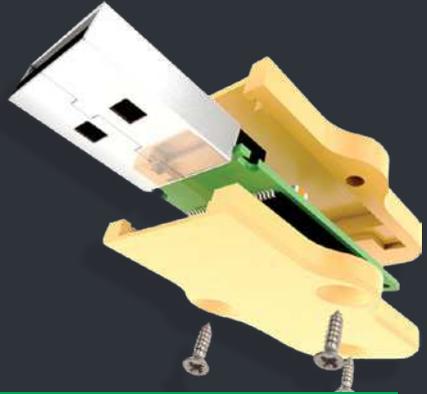
PROJECT EXAMPLES - USB MEMORY STICK



FREE RESOURCE

3D PRINTED MEMORY STICKS

A resource designed to show how you can use our uncased memory stick modules as the basis for a 3D printing project.



www.kitronik.co.uk/memorystick

FREE RESOURCE

3D PRINTED MATRIX LAMP PROJECT

A resource designed to show **how you can use our 5V LED lamp kit** as the basis for a 3D printing project.



www.kitronik.co.uk/3dprintedlamp

LED PICTURE FRAME KIT



This kit allows you to illuminate the edge of a picture frame using a number of LEDs. This happens for a period of time when the button is pressed. The duration is set using a trimmer potentiometer and can be anything from a few seconds to 30 minutes. The student can choose which LEDs they would like to use. These are connected to the terminal block (along with a current limit resistor). The board can drive 200mA, which is about 10 high brightness LEDs.



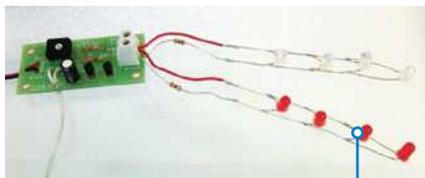
Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2146	£2.95	£2.35	£2.15	£2.04	£1.94

* Price shown includes bulk buy discount

HOW TO SELECT AND CONNECT LEDs TO THE KIT

The PCB has a terminal block to which the LEDs are connected. The LEDs are likely to require a current limit resistor. In theory every LED should have its own current limit resistor; however, in practice if the same type of LEDs are being used it is possible to share one current limit resistor between a number of LEDs. When doing this, the resistor value will be smaller than the resistor that is used with a single LED.



Flat edge of LED connected to (-)

If a red LED and a white LED are going to be positioned in each corner of a picture frame, then the four red LEDs would be connected in parallel and the four white LEDs in parallel. Each colour LED then shares a current limit resistor. The picture (left) shows these connections.

This example is connected to make it easy to see how to do the connections; in reality longer wires would be needed.

The value of the resistor depends on the type and number of LEDs used. Whilst you can calculate this we have an online calculator that works out the values for you. Alternatively this table gives the resistor required for various LEDs when using four in parallel.

Current limit resistor for four LEDs

3504	Standard red	33Ω
3505	Standard green	33Ω
3506	Standard yellow	33Ω
3542	Standard white	22Ω
3543	Standard blue	22Ω
3507	Ultra bright red	33Ω
3524	Ultra bright white	22Ω
3537	Ultra bright blue	22Ω

EASY BUILD TIMER PROJECT KIT



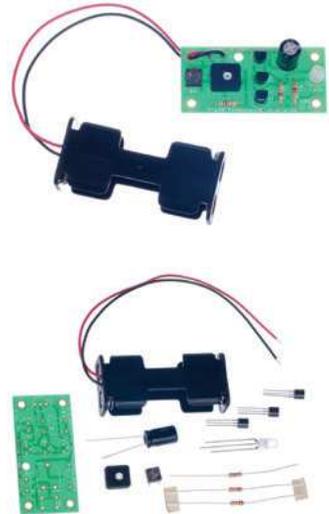
With its low part count this easy build timer project makes a good introduction to electronics. The timer uses a resistor capacitor network to provide a time delay of up to 3 minutes, which is set by the PCB mount variable resistor. When the button is pressed the LED changes from red to green, then at the end of the time interval it turns red.



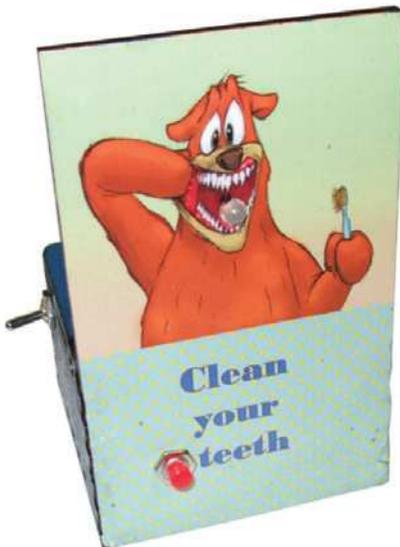
Requires 2x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2111	£2.29	£1.75	£1.50	£1.43	£1.35

* Price shown includes bulk buy discount



PROJECT EXAMPLES - EASY BUILD TIMERS



^ Examples of timers built by Year 7 students at Meole Brace School.

NO SOLDER STEADY HAND GAME PROJECT KIT



This easy build steady hand game kit requires no soldering. Terminal blocks are used to connect the battery pack, buzzer, game loop and wire, such that when the loop touches the wire the buzzer sounds. The kit comprises of a reel of solid tinned copper wire and a reel of flexible heavy duty cable, with the remaining parts being individually bagged. It includes build instructions, but not a full set of teaching notes.



Requires 2x AA batteries, available separately.

Description	Code	1+	5+	9*	13*
No solder steady hand game project kit - box of 24	2107-24	£44.95	£42.95	£40.80	£38.66

* Price shown includes bulk buy discount

PROJECT EXAMPLES - STEADY HAND GAME



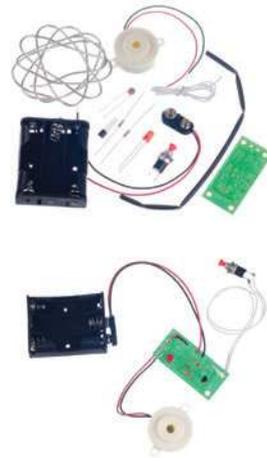
STEADY HAND GAME PROJECT (WITH LATCH)



The board has a buzzer that sounds momentarily when the loop makes contact with the wire. It also has an LED, which latches on when the buzzer sounds via the use of a thyristor. It then remains on so that even the briefest contact of the loop with the wire can be indicated. A push button is used to reset the LED.

i The cables are supplied on reels with the remaining parts being individually bagged.

 Requires 3x AA batteries, available separately.



Description	Code	1+	5+	9+*	13+*
Steady hand project kit (with latch) - box of 24	2108-24	£77.95	£70.95	£67.40	£63.86

* Price shown includes bulk buy discount

WIRELESS STEADY HAND GAME



With this steady hand game the connection from the loop to the board is made by the body of the person using the game, hence why it is called a wireless steady hand game. If the loop touches the wire track then a buzzer sounds for about a second (no matter how brief the touch). The circuit uses a hex buffer IC to detect the change in resistance when contact is made and the same buffer IC, with an RC network, keeps the buzzer on for the given time.

i The solid cable is supplied on a reel with the remaining parts being individually bagged.

 Requires a PP3 battery, available separately.



Description	Code	1+	5+	9+*	13+*
Wireless steady hand game - box of 24	2140-24	£69.85	£63.25	£60.09	£56.93

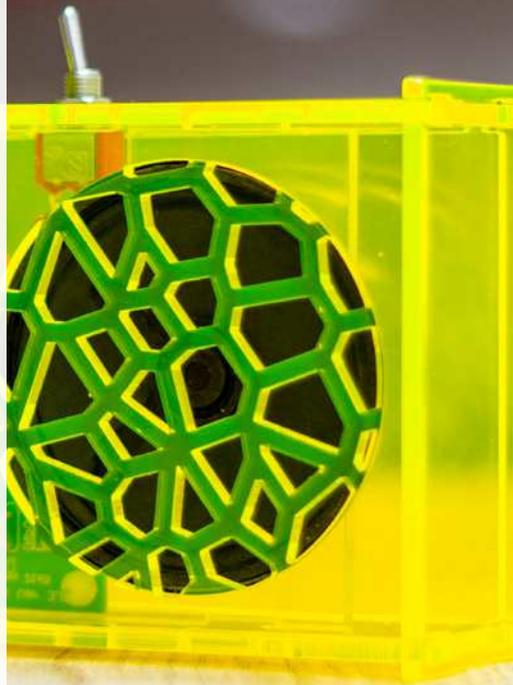
* Price shown includes bulk buy discount

02

INTERMEDIATE PROJECT KITS

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MONO AMPLIFIER KIT



This is the improved version of our popular amplifier kit which can be used with any personal stereo equipment, including phones with a headphone socket. The kit is connected with a 3.5mm jack lead. It uses a modern 1W audio amplifier IC to produce high quality audio while being powered using just two low cost AA batteries. It also benefits from improved battery life when compared to our older version powered from a PP3 battery. The kit can run from any voltage from 2.2V to 5.5V.



Requires 2 x AA batteries.

Code	1+	5+	50+	200+*	300+*
2165	£3.35	£2.40	£2.15	£2.04	£1.94

* Price shown includes bulk buy discount



Boxing your amplifier is easy with our Mono Amp Case (see page 32).

✓ Mono Amplifier Example



MONO AMP PRE-BUILT

The pre-built version of the amplifier kit allows you to focus more on product design. The mono amplifier kit (described above) is supplied with all the resistors, capacitors & IC fitted. Students just need to finish it by connecting the jack lead, speaker & battery holder to the board.



Code	1+	5+	50+	200+*	300+*
2165B	£3.60	£2.65	£2.40	£2.28	£2.16

* Price shown includes bulk buy discount

CARDBOARD MONO AMPLIFIER CASE



This simple yet stylish cardboard case for our Mono Amplifier Kit is perfect for those occasions where you are looking to deliver a quick, fun project, without the need for students to design and build a case to their own design.

These card cases enhance the amplifier's audio performance and can easily be modified or decorated, so that each student can produce a unique looking product. The outer face of the card is white, making it easy to decorate using felt tip pens, paint etc...

They are supplied as a flat net, which is then simply folded together to produce the final case. A set of instructions is available that explains how this is done in easy steps.



↗ Example amplifier case projects.



i Sold in boxes of 20 units. Amplifier kit not included.

📏 W75 x D78 x H75mm (assembled).

Description	Code	1+	5+
Cardboard Mono Amplifier Case – Box of 20	2154C	£10.95	£9.95

FREE LASER CUTTER FILES

Make a mono amp case with our free laser cutter files:

www.kitronik.co.uk/ampcases



PROJECT EXAMPLES - MONO AMPLIFIER



LOOKING TO UPGRADE THE SOUND QUALITY OF YOUR AMPLIFIER?

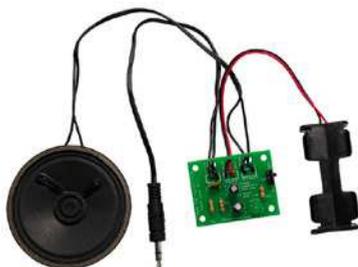
There are a wide range of speakers that can be used with the amplifier kits on **pages 160 to 161**.

MONO AMPLIFIER KIT WITH POWER SWITCH & STATUS LED

NEW!


The Mono Amplifier Kit with power switch and status LED adds some new features to our already best-selling mono amp kit.

This version of the mono amp also features an on-board on/off switch and also a handy status LED that can lead to longer battery life without the need to remove batteries from the cage when not in use. It uses an NCP2890 audio amplifier IC which can output 1.0W of power. The kit is supplied with a pre-built jack cable, an 8ohm 66mm speaker, an AA battery pack, and can run off any voltage from 2.5V to 5.5V.



Requires 2 x AA batteries.



www.kitronik.co.uk/2173

Code	1+	5+	50+	200+*	300+*
2173	£3.75	£2.60	£2.35	£2.23	£2.12

* Price shown includes bulk buy discount

WHY USE A PROJECT FROM KITRONIK?



DESIGNED FOR EDUCATION

Widely spaced components & pads, plus top grade PCBs.



SUPPLIED WITH TEACHING MATERIAL

Includes in depth resources to reduce your planning time.



INDIVIDUALLY PACKED

All you need to do is hand them out to students.



TECH SUPPORT

We're here to help with any issues that you & your students might come up against.

WHY HAVE WE IMPROVED THE MONO AMP KIT?

Since its launch, the Kitronik Mono Amp has been one of our most popular kits, especially in the classroom. It's quick and easy to build and delivers great results. It also offers a fantastic platform for designing custom enclosures. Whilst visiting schools recently, we learned that there was an opportunity for us to improve the kit for you.

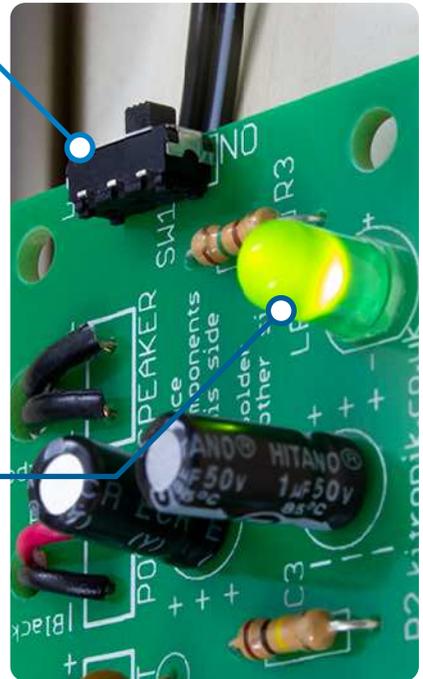
You asked, we listened, and then we delivered! The feedback we received centred around two additional features. A power status LED and an on/off switch. Now, it might seem that we're more excited than we ought to be but stick with us while we explore the requested features and find out why it's made the kit so much more versatile.

ON/OFF SWITCH

Now, pulling all of the batteries from the kits at the end of the lesson is optional. The LED will let you know if it's still powered up and the on/off switch allows you to take swift action! As with the LED, you can connect the switch to the PCB with wire and mount the switch to an accessible part of an enclosure.

STATUS LED

You can now tell if the circuit is still powered up or not, even if hidden away inside an enclosure. Instead of soldering the LED straight to the board, you can separate the two with some wire and mount the LED to a visible part of the enclosure.



If these features aren't for you, you can still buy the original Mono Amplifier Kit V3.0 (stock code 2165). However, as the improved kit only has three more components than the original kit, it's still an easy build kit that can be soldered together by a novice in no time!

Read more about the changes at:



www.kitronik.co.uk/newamp

BLUETOOTH AMPLIFIER KIT



Our Bluetooth Amplifier Kit is the ideal starting point for a modern product design project. The kit has an integrated 3W Class-D amplifier which gives excellent audio performance. It also has an integrated LiPo battery charging circuit for people who also want a portable mains free solution. Due to the complexity of the product most parts are pre-mounted though some soldering is required.

Key features:

- 3W audio amplifier with Bluetooth link (based on a fully CE compliant module).
- Play music from a phone, tablet and computer wirelessly.
- Simple user interface, via single on / off switch.
- Auto reconnect or enters pairing mode on power up.
- LED and sounds indicate status information such as 'pairing'.
- Optional connection point for additional off board LED.
- Can be powered from a 1A micro USB supply or LiPo battery (**both available separately**).
- Includes automatic LiPo charging for battery capacities between 400mAh to 1000mAh.
- Speakers supplied unconnected allowing cable lengths and cable routing to be personalised to specific enclosure designs.

i The kit is available either on its own with no speakers, or with two high quality 65mm or 100mm full range speakers. The 100mm speaker has improved 'bass' response compared to the 65mm speaker.



^ Example speaker case project.

Description	Code	1+	5+	50+	200+*	300+*
Bluetooth Amp Kit – No Speakers	2160K	£19.50	£17.50	£16.00	£15.20	£14.40
Bluetooth Amp Kit – 4Ω 65mm Speakers	2160-A	£24.50	£22.50	£21.00	£19.95	£18.90
Bluetooth Amp Kit – 8Ω 100mm Speakers	2160-B	£30.00	£27.00	£25.00	£23.75	£22.50

* Price shown includes bulk buy discount

Bluetooth Amp Kit Accessories	Page	Code	1+	10+	100+
Polymer Lithium Ion Battery (3.7V, 1Ah)	148	4652	£4.25	£3.85	£3.50
Polymer Lithium Ion Battery (3.7V, 400mAh)	148	2209	£3.50	£3.15	£2.85
5V 1A Micro USB UK mains wall power supply	150	2208	£4.49	£4.25	

STEREO AMPLIFIER KIT



This amplifier kit can be used with any personal stereo equipment, including phones with a headphone socket. It uses a NJM2073D IC which can output 1W per channel. The kit is supplied with two speakers.

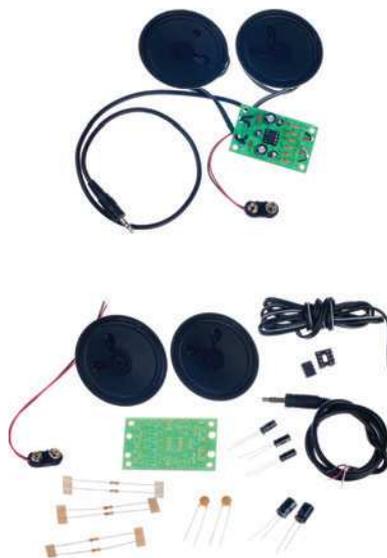
It has a PP3 battery clip and can run off any voltage from 2 to 15 volts.

It works nicely off a 9V battery (not supplied).

Supplied with a pre-made jack plug.

Code	1+	5+	50+	200+*	300+*
2136	£5.15	£4.00	£3.75	£3.56	£3.38

* Price shown includes bulk buy discount



✓ Stereo Amplifier Example



STEREO AMP PRE-BUILT

The pre-built version of the amplifier kit allows you to focus more on product design. The stereo amplifier kit (described above) is supplied with all the resistors, capacitors & IC holder fitted. Students just need to finish it by connecting the jack lead, speakers & power clip to the board.



^ Deluxe Amplifier Example



Code	1+	5+	50+	200+*	300+*
2136B	£6.50	£5.35	£4.90	£4.66	£4.41

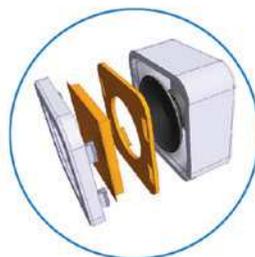
* Price shown includes bulk buy discount

FREE RESOURCE – 3D PRINTED AMPLIFIER / SPEAKER CASES

This resource has been designed to show how you can use our Mono and Stereo Amplifier kits as the basis for a 3D printing project. Speaker cases are a great size to still print relatively quickly, but also allow for more detailed exploration in the design and assembly of multiple parts.

The downloaded resources include:

- STL files for example cases.
- STL and Autodesk Inventor files for the amplifier kits, which are an ideal starting point for new designs.



www.kitronik.co.uk/3dprintedamps

DELUXE STEREO AMPLIFIER



This amplifier kit can be used with any personal stereo equipment, including phones with a headphone socket. The kit is supplied with a 3.5mm jack lead allowing it to be connected to a wide choice of audio equipment. The kit has a volume control & a power LED. It can be powered by a battery connected to the PP3 clip, or a DC power module can be plugged in when the batteries automatically disconnect and the power supply is used. The kit can be powered off a 2V to 15V supply, though the volume is better with a higher supply.



It works nicely off a 9V battery (not supplied).



It uses a NJM2073D IC which can output 1W per channel. The kit is supplied with two speakers.



Description	Code	1+	5+	50+	200+*	300+*
3.5mm jack - Deluxe stereo amplifier kit	2141-JK	£6.80	£5.30	£5.00	£4.75	£4.50

* Price shown includes bulk buy discount

PRE-BUILT DELUXE AMPLIFIER

The deluxe amplifier is available with the parts on the board pre assembled. This is perfect for students studying product design where the focus is more on the enclosure rather than the electronics.

Students only need to connect the wires for the speakers, PP3 clip and the lead to connect the audio. The deluxe amp can be run off batteries or via the DC jack socket and comes with volume control, power LED and power switch.



Description	Code	1+	5+	50+	200+*	300+*
Deluxe stereo amplifier 3.5mm jack version pre-built	2141B-JK	£8.50	£7.00	£6.70	£6.37	£6.03

* Price shown includes bulk buy discount

3W CLASS D STEREO AMPLIFIER



This 3W amplifier kit uses a modern 'Class D' stereo circuit design. This allows this kit to produce a loud and high quality sound from a power supply of 5.5V all the way down to 3.2V. This makes it ideal for portable battery powered applications which require high quality stereo output. This kit can be powered using a micro USB PSU for people looking for a mains powered solution.

i The kit is supplied with a 3.5mm jack lead and 2 full range speakers, which are 5W and 65mm in size with corner mountings. The kit features a volume control & power LED as well as an on / off switch that switches between battery power, off, and micro USB power.

 Runs off 3x AA batteries or a mobile phone charger.



Description	Code	1+	5+	50+	200+*	300+*
3W class D stereo amplifier	2158	£13.75	£12.25	£11.25	£10.69	£10.13

* Price shown includes bulk buy discount



< You can see the video (left) and view full information for this product at the following link:

 www.kitronik.co.uk/2158

PROJECT EXAMPLES - HIGH POWER STEREO AMPLIFIER



HIGH POWER STEREO AMPLIFIER



This amplifier kit can output up to 15W per channel into a pair of high quality speakers. The kit is capable of producing a very loud, high quality stereo sound. The kit includes all the parts required (plug in power supply, two speakers, PCB etc) to build your own amplifier for use with items such as MP3 players.

i The kit features a power LED, on / off switch and volume control.



Description	Code	1+	5+	50+	200+*	300+*
High power stereo amplifier	2143-JK	£30.00	£28.00	£27.00	£25.65	£24.30

* Price shown includes bulk buy discount

HIGH POWER AMP KIT (PCB & COMPONENTS)

Just the individual PCB and components to make the high power stereo amplifier described above. The product includes all the components required to build the PCB, but not a power supply, speakers or cable to connect it to audio equipment.

i Self-assembly.



Description	Code	1+	5+	50+	200+*	300+*
High power amp kit (PCB & components)	2143K	£12.00	£10.50	£9.50	£9.03	£8.55

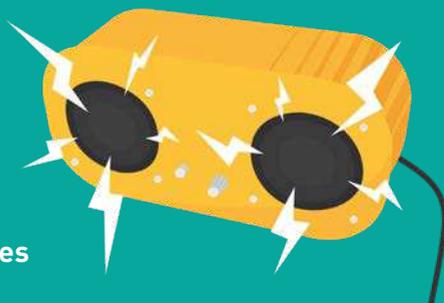
* Price shown includes bulk buy discount

FREE LASER CUTTER FILES

Make a high power amp case with our free laser cutter files:



www.kitronik.co.uk/ampcases



3D PRINTING RESOURCE

3D PRINTED BLUETOOTH AMPLIFIER CASE

See how you can make a 3D printed case for our Bluetooth amplifier kit (see page 36 for the kit).



The resource and 3D printing files for this project are available from:



www.kitronik.co.uk/3dprinting

TRY OUR CUSTOM PCB SERVICE

Let us take the hassle out of manufacturing your school's PCBs.



www.kitronik.co.uk/custom-pcbs

TIMED NIGHT LIGHT PROJECT KIT



The colour changing LED on this kit turns on when it goes dark and stays on for a period of time. This makes a good night light and because the LED is only on for a small amount of time the batteries last much longer.

There is an on board trimmer to set the light level at which the LED turns on and another trimmer to set how long the LED stays on for. The maximum duration is about 30 minutes. When set to 15 minutes and activated once a night the batteries will last two months.



Requires 3x AA batteries, available separately.



Code	1+	5+	50+	200+*	300+*
2139	£3.75	£3.05	£2.85	£2.71	£2.57

* Price shown includes bulk buy discount

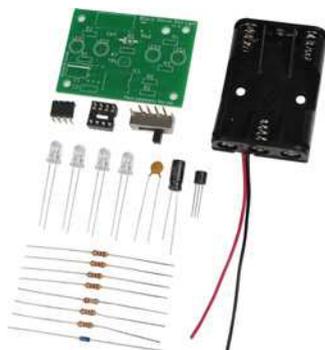
PROJECT EXAMPLES - TIMED NIGHT LIGHTS



DELUXE BIKE LIGHT KIT



This bike light kit is simple to build and is an excellent way to learn about the ever popular 555 timer IC. The kit uses four ultra bright LEDs, and can be operated in two modes: constant and flash. Both the flash rate and brightness conform to British Standards for vehicle road lighting (2005), making it ideal for use as a rear bike light. Alternatively, it can be used as a night safety product or flashing eyes. Using 4 x AAA batteries, this kit will run for over 72 hours.



 Requires 4x AAA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2167	£3.50	£2.75	£2.45	£2.33	£2.21

* Price shown includes bulk buy discount

555 ASTABLE KIT (TONE GENERATOR)



This kit is perfect for GCSE students needing to use a 555 timer in its astable mode, where it produces a square wave output. The frequency of the square wave is adjustable via the variable resistor. The board has a choice of two outputs. The logic output can be used to drive another IC or a speaker can be connected so the tone is heard (e.g. a door bell). The push button switch connects to the reset line such that the IC is only active when the button is pressed.

 Requires 3x AA batteries and depending upon desired use a speaker, both available separately.

Description	Code	1+	5+	50+	200+*	300+*
555 timer astable (tone generator) kit	2117	£3.15	£2.35	£2.05	£1.95	£1.85
8Ω 50mm speaker - 10 pack	3302	£5.50				

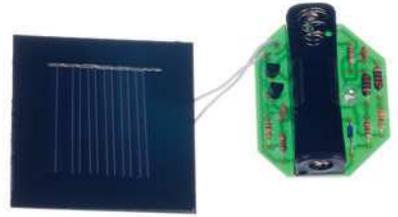
* Price shown includes bulk buy discount

SOLAR GARDEN LIGHT KIT



The solar garden light is an interesting project that uses sustainable energy to illuminate a white LED. During the day the solar panel charges an AA battery, then when it goes dark the board automatically switches from charging the battery to illuminating the LED. The solar panel is resin encapsulated and therefore waterproof. Students will need to make a waterproof enclosure for the rest of the parts. Alternatively the sustainability theme can be extended to reusability as the board has been shaped so that it will fit into an old jar.

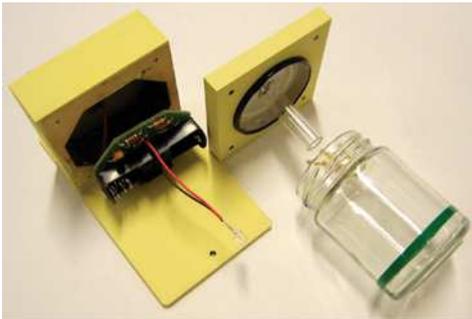
 This kit includes the rechargeable battery.



Code	1+	5+	50+	200+*	300+*
2134	£6.80	£5.40	£4.80	£4.56	£4.32

* Price shown includes bulk buy discount

PROJECT EXAMPLES - SOLAR GARDEN LIGHT



SOLAR POWER STARTER KIT

KS
4

Learn how to harness the energy of the sun with our new Solar Power Starter Kit. With this kit it is possible to build a simple solar charging and power supply system for a variety of useful low power devices.

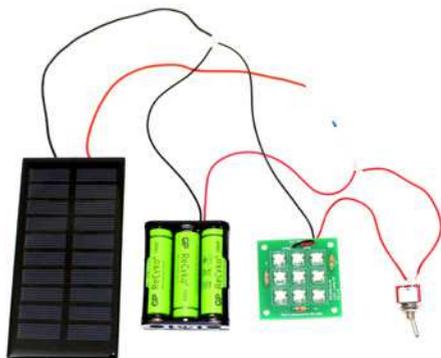
Each pack contains:

- 1 x 5.0V 130mA Polycrystalline Solar Cell.
- 1 x BAT41 Signal Diode.
- 1 x SPST Toggle Switch.
- 1 x 5V LED Desk Lamp Kit.
- 1 x 3x AA Battery Holder with Flying Leads.
- 3 x Rechargeable AA Battery (1300mA/h).

Once the kit has been set up and placed in direct sunlight the batteries will begin to charge. If the light level is insufficient to facilitate charging, the diode prevents any of the charge held in the batteries from discharging back through the solar cell.

The supplied switch enables you to cut power to the kit that you are powering for greater recharging efficiency. If used with the included Kitronik LED Desk Lamp Kit, for example, fully charged batteries will provide light for up to 17 hours, more than enough for a little light reading.

 www.kitronik.co.uk/2168



^ Kit of parts.

 **The kit does not contain any connecting wire** - you will need to use wire like multi-stranded Wire.

 Requires assembly and some soldering.

Description	Code	1+
Solar power starter kit	2168	£12.85

LEARN TO SOLDER SURFACE MOUNT KIT

NEW!

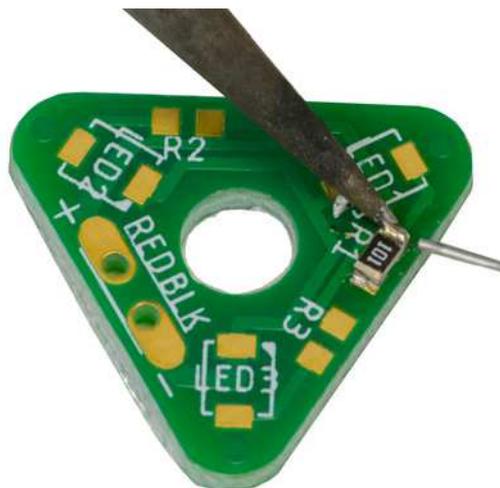
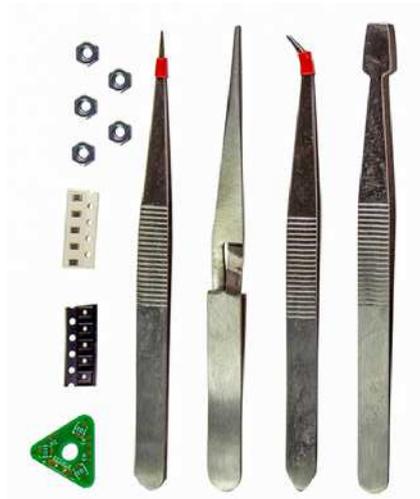

Our learn to solder surface mount kit is an excellent introduction to surface mount soldering. The pack provides all of the parts and PCB required to make a lamp just like the 5V Mini LED Lamp Module.

Each pack contains:

- 5 x Surface Mount LEDs.
- 5 x Surface Mount 100ohm Resistors
- 1 x Tweezer set, 4 piece.
- 5 x M3 Hex Full Width Nut.
- 1 x Learn to Solder Surface Mount PCB.

This kit has been designed to give students soldering experience, with simple surface mount component placement. Surface mount components are designed so that the component is mounted on to the surface of the board and the solder joints are made across the surfaces of the PCB (rather than through the PCB) and components. The testing of a completed board is simple, once a battery supply or USB supply is soldered to the PCB it is possible to visually inspect the solder joints.

Once built, the resulting 5V Mini LED Lamp Module is the perfect board for anyone who wishes to design a low power lighting enclosure, such as a desk lamp or accent light.



^ Example of the kit being soldered.



www.kitronik.co.uk/2171

Description	Code	1+	10+	50+	200+*	300+*
Learn to Solder Surface Mount Kit	2171	£3.95	£3.45	£3.15	£2.99	£2.84

* Price shown includes bulk buy discount

ALARM PROJECT KIT

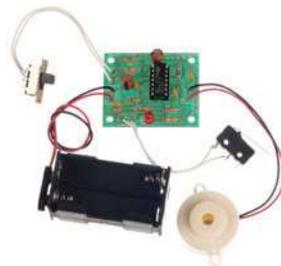


The kit can be used to make a shed or room alarm. It is armed / disarmed by a hidden switch. Alarms are detected by a micro switch mounted onto a door. A timer provides an entry delay during which the system can be disarmed, whilst a separate timer silences the alarm after two minutes.

Both of these timers are implemented via a 555 timer IC. The alarm can be further enhanced by using a simple key switch for arming / disarming, or by adding a magnetic door contact to activate it. The board, battery pack & buzzer can be placed into a box designed by the student.



Requires 4x AA batteries, available separately.



Code	1+	5+	50+	200+*	300+*
2101	£5.20	£4.20	£3.85	£3.66	£3.47

* Price shown includes bulk buy discount

KEY SWITCH

This simple key switch is a great addition to the alarm project. The switch is an SPST switch activated by the key, which can be removed in both positions.



Supplied with two keys.



Code	1+	10+
2001	£2.10	£1.95

DOOR CONTACT

The door contact consists of a reed switch and magnet, both housed in high impact enclosures. The switch is closed circuit when the magnet is present and open circuit otherwise.

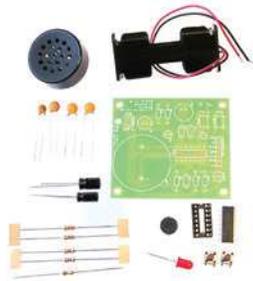


60 x 14 x 14 mm (each)



Code	1+	10+
2055	£2.00	£1.60

RECORD PLAYBACK KIT



This module allows a short (10 second) message to be recorded and played back at the push of a button. There is one button to play the message and another to re-record the message, which can be done over and over again.

The board includes a status LED that indicates recording is in progress or that playback has finished. Both the speaker and microphone are PCB mounted, so the only flying leads are for the battery holder which takes 2 AA batteries.

As the module shuts down when it is not in use, the batteries will last a very long time. An interface connector is available for more advanced users that wish to access the control signals.



Requires 2x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2149	£6.00	£4.60	£4.25	£4.04	£3.83

* Price shown includes bulk buy discount

★ BULK BUY DISCOUNTS

Where you see the star symbol (as above) the kit is eligible for additional bulk discounts, when you are buying 200 or more Kitronik project kits.

Different kits can be mixed to achieve the required quantity. The additional discount will be applied to appropriate price break for the quantity of each kit purchased.

ORDER
200+ KITS
5% OFF*

ORDER
300+ KITS
10% OFF*

* the 50+ price

TIMER PROJECT KIT

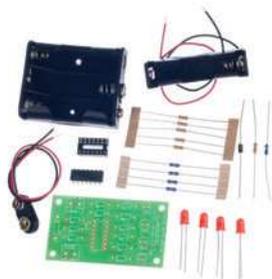
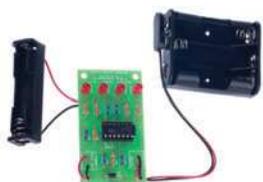
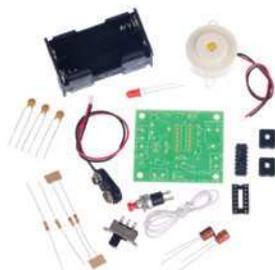


The timer project uses a dual 555 timer, which once started by pressing the button, illuminates an LED until the desired time out period has elapsed, and then a buzzer is sounded. The duration of both the delay and buzzer sound period can be determined by the student and are easily adjusted by PCB mounted potentiometers. This allows the board to be used for a variety of applications, such as an egg timer or a timer for a game. (Max time period 200 seconds, max buzzer period 10 seconds)

 Requires 4x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2104	£5.15	£4.00	£3.70	£3.52	£3.33

* Price shown includes bulk buy discount



BATTERY TESTER PROJECT KIT



This kit has a single AA battery holder into which a battery can be placed; LEDs will then illuminate to show the remaining capacity of the battery. The circuit uses a quad operational amplifier to provide a reference voltage and comparators to determine which LEDs should go on. This makes it a great kit for studying operational amplifiers.

Testing of the kit can be performed by using an adjustable power supply, or with our circuit tester (consisting of an AA battery holder, variable resistor & crocodile clips).

 Requires 3x AA batteries, available separately.

Description	Code	1+	5+	50+	200+*	300+*
Battery tester project kit	2102	£3.35	£2.65	£2.35	£2.23	£2.12
Circuit tester	2003	£6.50				

* Price shown includes bulk buy discount

DICE PROJECT KIT



The kit has seven LEDs that are used to display a random dice number every time the 'start' button is pressed. A PIC micro-controller, pre-programmed with special software controls the dice.

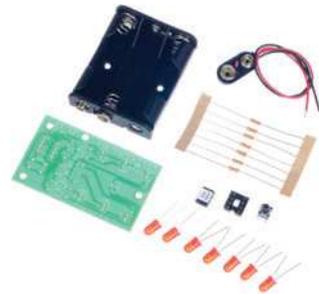
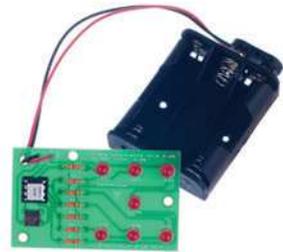
The 'start' switch mounts directly onto the board allowing it to be used as built, or the dice can be housed into an enclosure designed by the student.



Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2109	£4.25	£3.20	£2.90	£2.76	£2.61

* Price shown includes bulk buy discount



PROJECT EXAMPLES - DICE KIT



THERMOMETER PROJECT KIT



The kit uses a thermistor to measure the temperature which is then displayed on an LED scale. A PIC micro-controller, pre-programmed with special software, is used to process the output of the thermistor and light the relevant LEDs.

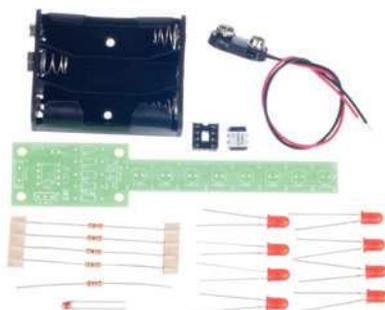
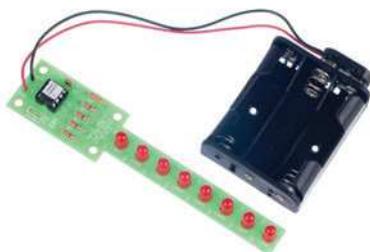
The thermometer has two temperature ranges. One designed for indoor use and the other for outdoor use (selected by a wire link). The temperature is displayed every 10 seconds, or can be displayed on demand by adding either a normally open / normally closed push button switch.



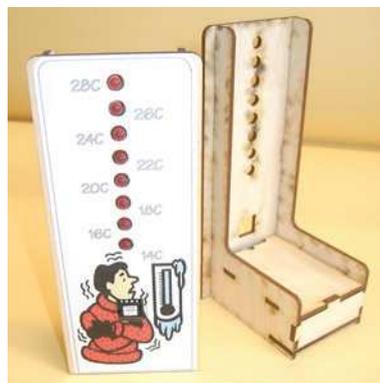
Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2110	£5.10	£3.90	£3.60	£3.42	£3.24

* Price shown includes bulk buy discount



PROJECT EXAMPLES - THERMOMETER



GAME PROJECT KIT



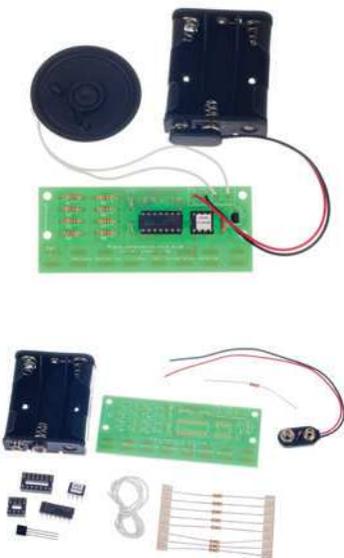
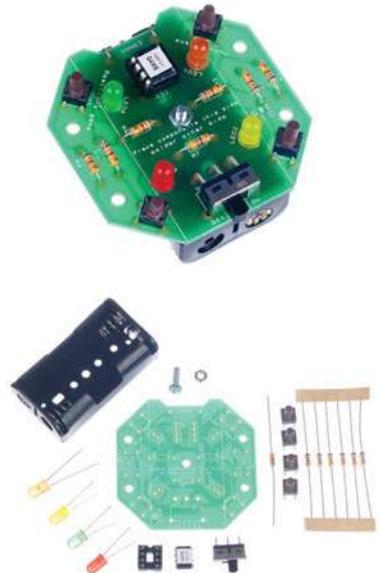
The kit has four buttons and LEDs to make up a game, both can be used as a memory game and a reactions game. A PIC micro-controller, pre-programmed with special software controls the game.

The on / off switch and battery pack mount directly onto the board, allowing it to be used as built or the game can be housed into an enclosure designed by the student.

 Requires 2x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2103	£5.55	£4.15	£3.85	£3.66	£3.47

* Price shown includes bulk buy discount



XYLOPHONE PROJECT KIT



The xylophone has eight notes, which are sounded by placing a finger onto the PCB, allowing a simple tune to be played. The conversion of key presses into the frequency of the note is done by a PIC micro-controller, pre-programmed with software for this application.

The student can mount the PCB, battery pack and speaker into a box they have designed to make a children's toy.

 Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2105	£5.75	£4.55	£4.25	£4.04	£3.83

* Price shown includes bulk buy discount

FM RADIO KIT



The FM radio kit uses industrial surface mount ICs (the Si4820 and the NCP2890). The FM radio kit is supplied with the ICs mounted on the board. The students have to add the remaining resistors and capacitors to finish the kit. The radio has controls for tuning and to adjust the volume. The circuit includes an audio amplifier and output is via a 66mm diameter speaker that is supplied with the kit.



The board can be powered from a 2.5V to 5.5V supply and works nicely off a 5V wall supply or 3x AA batteries.



Description	Code	1+	5+	50+	200+*	300+*
FM radio kit	2157	£12.00	£10.50	£9.50	£9.03	£8.55

* Price shown includes bulk buy discount

TELESCOPIC FM AERIAL ANTENNA

This Telescopic FM Aerial Antenna is designed to be compatible with our FM radio kit. It includes solder tag and bolt for simple connection and mounting. It is a great way of adding a more professional look and feel to your final design (as shown in the example image, below left).



< Example use

Length: 11cm (minimum) to 49cm (maximum). www.kitronik.co.uk/2006



Description	Code	1+	10+	25+
Telescopic FM Aerial Antenna	2006	£2.20	£1.80	£1.40

PROJECT EXAMPLES - FM RADIO



DO YOU LIKE THIS
3D PRINTED CASE
(TO THE LEFT)?

Get the 3D Printing files here:

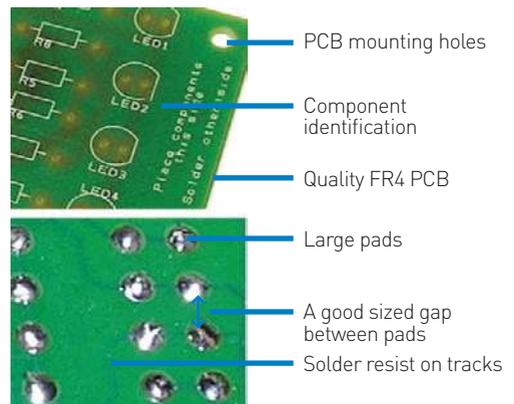


www.kitronik.co.uk/3dprints

PCBs

Our PCBs use an industry standard FR4 quality board, manufactured using a lead free finish. We try to make the PCBs easy to assemble by providing component identification and ensuring that the components are well spread out.

On the underside of the board, the pads are large for ease of soldering and again, where possible, well spaced from adjacent pads. A solder resist layer is present to ensure that the solder only goes on the pads, thus preventing unintentional solder shorts between tracks.



7 SEGMENT LED DISPLAY KIT



This kit uses a binary up down counter IC and a binary to 7 segment display driver IC to operate the 7 segment LED display. Connections to the board allow up or down counting to take place and a pre-set value to be loaded.

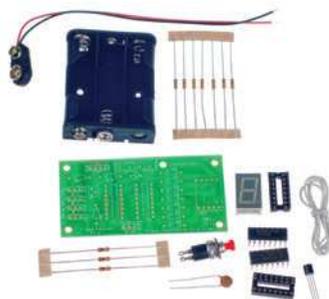
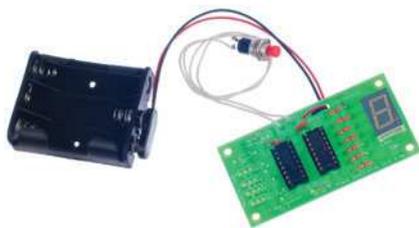
The kit makes a nice table football score board as supplied or an electronic dice if used in conjunction with the square wave generator (Application note available).



Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2118	£5.55	£3.95	£3.75	£3.56	£3.38

* Price shown includes bulk buy discount



QUIZ BUZZER PROJECT KIT



Two people (or two teams) can use the quiz buzzer to show who pressed their button first. When the button is pressed the buzzer sounds and either the red or green light is illuminated to show who was fastest.

This project is brilliant for demonstrating a wide range of electronics. It uses push to make & push to break switches, thyristors as latches, transistors, logic gates, LEDs & buzzers.



Requires 3x AA batteries, available separately.

Code	1+	5+	50+	200+*	300+*
2116	£6.10	£4.70	£4.30	£4.09	£3.87

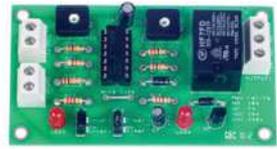
* Price shown includes bulk buy discount

RELAY BOARD KIT



This is a versatile board that can easily be configured via jumpers and trimmer potentiometers to do a range of tasks. Most sensors and switches can be connected to the input of the board and the trigger level set for the input device. This can be inverted if required, then there is the option to feed this straight to the relay or a timer of up to 25 minutes can be used. The board can run off any voltage from 4.5 to 6 volts. A datasheet that details what the board does and how to use it (along with some worked examples) can be downloaded from:

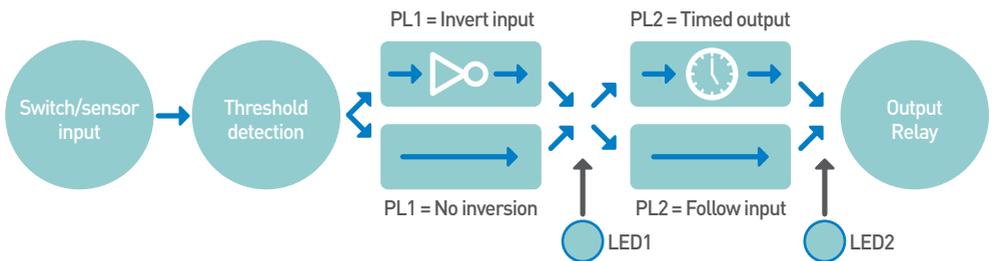
 www.kitronik.co.uk/2144



Code	1+	5+	50+	200+*	300+*
2144	£5.95	£4.65	£4.35	£4.13	£3.92

* Price shown includes bulk buy discount

BLOCK DIAGRAM



EXAMPLE APPLICATION - MOTION TRIGGERED SOUNDER

Suppose you want to detect if someone has walked in o a space and audibly sound this elsewhere. Then you could use a PIR module, the relay board and a sounder to do this. The connections would be as follows:



03

BBC micro:bit & CODING PRODUCTS

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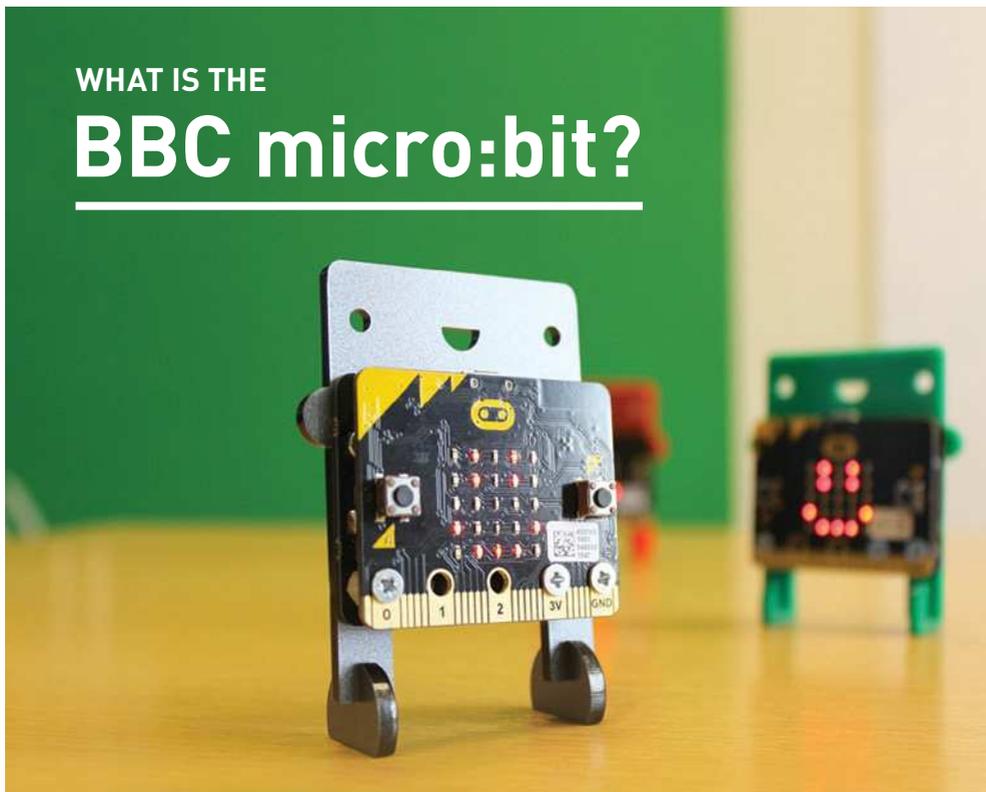
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WHAT IS THE BBC micro:bit?



Kitronik are proud to be one of the first partners who worked alongside the BBC to bring the BBC micro:bit to life. So what is the BBC micro:bit?

“The micro:bit is a handheld, fully programmable computer being given free to every Year 7 or equivalent child across the UK. It’s 70 times smaller and 18 times faster than the original BBC Micro computers used in schools in the early 1980s.

This little device has an awful lot of features, like 25 red LED lights that can flash messages. There are two programmable buttons that can be used to control games or pause and skip songs on a playlist. Your BBC micro:bit can detect motion and tell you which direction you’re heading in, and it can use a low energy Bluetooth connection to interact with other devices and the Internet – clever!”

Quote from www.microbit.org, 2015

For more information check out these links:



www.microbit.org

www.kitronik.co.uk/microbit

BBC micro:bit (BOARD ONLY)

This is a single BBC micro:bit with **no accessories**, dispatched in low waste antistatic packaging.



www.kitronik.co.uk/5613

Code	1+
5613	£10.49

BBC micro:bit (BOARD ONLY) – RETAIL PACK

This is a single BBC micro:bit with **no accessories**, dispatched in retail packaging.



www.kitronik.co.uk/5614

Code	1+
5614	£11.50

BBC micro:bit STARTER PACK WITH ORGANIC COTTON BAG

The Starter Pack consists of: BBC micro:bit, 1m USB cable, battery cage, 2 x AAA batteries, soft eco friendly fabric bag.



www.kitronik.co.uk/5615

Code	1+
5615	IMPROVED! £12.85

BBC micro:bit 10 STUDENT CLASSROOM PACK

The Classroom Pack consists of: 10 x BBC micro:bits, 10 x 1m anti-tangle USB cables, 10 x battery cages, 20 x AAA batteries.



www.kitronik.co.uk/5616

Code	1+
5616	£124.00

BBC micro:bit WITH MI:pro CASE AND ACCESSORIES

This handy pack includes: BBC micro:bit, MI:pro protector case, 1m anti-tangle USB cable, battery cage, 2 AAA batteries.



www.kitronik.co.uk/5617

Code	1+
5617	£15.39

BBC micro:bit WITH MI:power BOARD & CABLE

The perfect pack for making a mobile project. This pack includes: BBC micro:bit, MI:power board, fixing screws, 1m anti-tangle USB cable, coin cell battery.



www.kitronik.co.uk/5619

Code	1+
5619	£16.49

BBC micro:bit WITH INVENTOR'S KIT AND ACCESSORIES



This pack is the ultimate BBC micro:bit Starter Pack. It includes a BBC micro:bit, our world famous Inventor's Kit, 1m anti-tangle USB cable, battery cage, and 2 x AAA batteries.

More details on our Inventors Kit and add-on packs for the Inventors Kit can be found on **pages 66 & 67**.



www.kitronik.co.uk/5618

Description	Code	1+	10+	100+
BBC micro:bit with Inventor's Kit and accessories	5618	£32.99	£29.99	£28.49



PLEASE NOTE: The BBC micro:bit will come in one of 4 [random] colour schemes.

MI:pro PROTECTOR CASE FOR THE BBC micro:bit

The MI:pro protector case not only keeps a BBC micro:bit in perfect condition but also offers a number of other benefits. The 2 x AAA battery holder that we stock can be bolted to the back, making a compact and portable unit. It also can be stood neatly on a desk and provides large, easy to read labels for the A and B buttons. The 'edge connector' on the bottom of the BBC micro:bit remains accessible.



This case is available in fully clear or with blue, green or orange accents.



www.kitronik.co.uk/5606

Description	Code	1+	10+
MI:pro protector case for the BBC micro:bit – Clear	5606	£2.95	£2.65
MI:pro protector case for the BBC micro:bit – Blue	5606-B	£2.95	£2.65
MI:pro protector case for the BBC micro:bit – Green	5606-G	£2.95	£2.65
MI:pro protector case for the BBC micro:bit – Orange	5606-O	£2.95	£2.65

MI:power CASE FOR THE BBC micro:bit

This case has been designed to protect a BBC micro:bit with our MI:power board attached (see [page 91](#) for details). The case fully encloses both of the PCBs creating a rugged unit that is ideal for creating portable designs. The clear front allows the BBC micro:bit to be seen inside the case, allowing the on-board LED matrix to be viewed. This case is easy to assemble using the nylon screws provided. This case is available in fully clear or with blue, green or orange accents.

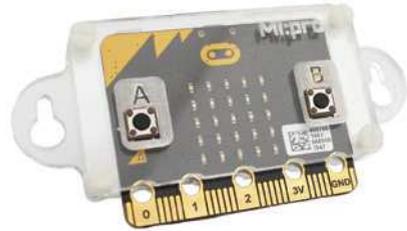


www.kitronik.co.uk/5611

Description	Code	1+	10+
MI:power case for the BBC micro:bit – Clear	5611	£3.15	£2.85
MI:power case for the BBC micro:bit – Blue	5611-B	£3.15	£2.85
MI:power case for the BBC micro:bit – Green	5611-G	£3.15	£2.85
MI:power case for the BBC micro:bit – Orange	5611-O	£3.15	£2.85

MI:pro 'MOUNTABLE' CASE FOR THE BBC micro:bit

This is the mountable version of the MI:pro Protector Case for the BBC micro:bit. This 'Mountable' case features two 'keyhole slot' style wall mounting points attached to the sides of the BBC micro:bit case.



www.kitronik.co.uk/5605

Description	Code	1+	10+
MI:pro 'mountable' case for the BBC micro:bit	5605	£2.95	£2.65

E-TEXTILES KIT FOR THE BBC micro:bit

The E-Textiles kit for the BBC micro:bit offers a great way to get into creating BBC micro:bit controlled E-Textiles projects and designs.

The kit comes with everything you need to create the Emoji Bag and Rocket Pencil Case projects, with enough extra LEDs and Crocodile clips to also create something of your own design.



Kit contents:

- 5 x Sewable Red LED boards.
- 5 x Sewable White LED boards.
- 1 x 6m spool of Conductive Thread.
- 5 x White 5mm Diffused LEDs.
- 10 x Crocodile Clips.

www.kitronik.co.uk/5607

Example project made with this kit. [>](#)



Description	Code	1+	10+	50+
E-Textiles kit for the BBC micro:bit	5607	£7.50	£6.75	£6.10



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

2 X AAA BATTERY BOX WITH SWITCH AND JST CONNECTOR

Add a versatile power solution to your micro:bit projects with this 2 x AAA battery holder featuring; a cover, a on/off switch and JST connector. Batteries sold separately.



Code	1+	10+	100+
2225	£0.95	£0.85	£0.75

2 X AAA BATTERY CAGE WITH JST CONNECTOR

This 2 x AAA Battery Cage with JST connector is the perfect way of powering the BBC micro:bit. Supplied with 145mm colour coded leads. Batteries sold separately.



Code	1+	10+	100+
2271	£0.90	£0.77	£0.67

NOODLE CABLE

A 1M White Anti-Tangle (flat type) USB Type-A to Micro-B USB Noodle cable.

Code	1+	10+
4154	£1.50	£1.25



NEED POWER?

Check out our wide selection of batteries.
See **pages 145-147**.

STOP:bit - TRAFFIC LIGHT FOR THE BBC micro:bit

Upgrade your pedestrian crossing project with the STOP:bit for BBC micro:bit. This is available either pre-assembled or as a solder-yourself kit, has 3 LEDs and be can be coded with the MakeCode Editor.

www.kitronik.co.uk/5642

Description	Code	1+	10+	50+
STOP:bit - Assembled	5642	£3.50	£3.15	£2.85
STOP:bit - Kit	5642K	£2.70	£2.45	£2.20



LAMP:bit - STREET LIGHT FOR THE BBC micro:bit

The LAMP:bit is a bolt-on/clip-on board for the micro:bit that replicates a street light which features a built in phototransistor for autonomous switching.

www.kitronik.co.uk/5643

Description	Code	1+	10+	50+
LAMP:bit	5643	£4.20	£3.75	£3.40



ACCESS:bit - BARRIER FOR THE BBC micro:bit

The ACCESS:bit is a bolt-on/clip-on board for the micro:bit that replicates an automated barrier which features a servo motor and buzzer for autonomous activation.

www.kitronik.co.uk/5646

Description	Code	1+	10+	50+
ACCESS:bit	5646	£10.00	£9.00	£8.10



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this page.

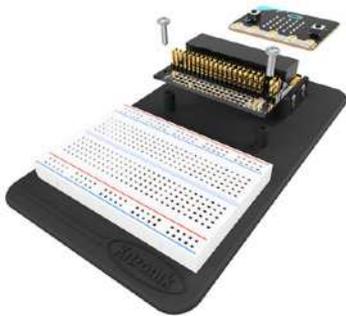
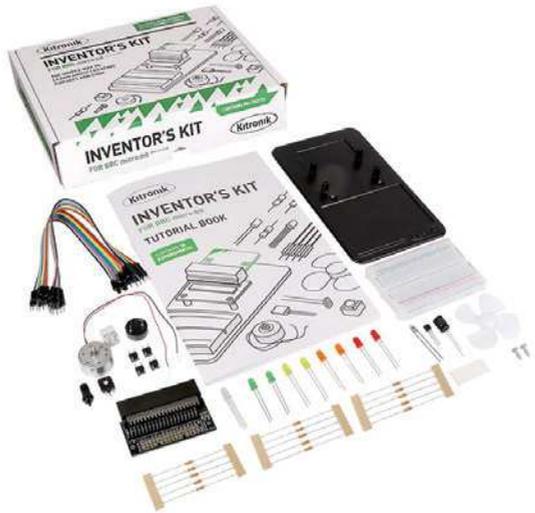
KITRONIK INVENTOR'S KIT FOR THE BBC micro:bit

This kit is the perfect way of introducing students to programming, electronic control circuits and hardware interaction with the BBC micro:bit.

It contains everything you need to complete 10 experiments (plus two bonus online experiments) including using LEDs, motors, light sensors and capacitors. The easy to follow tutorial book guides the user through everything they need to know about programming the BBC micro:bit. It is an excellent primer for teachers wanting to know more about programming and STEM.

You will learn how to use a breadboard, the outputs of the BBC micro:bit, and a variety of electronic components, opening up a world of STEM learning.

We have some great add-on kits to continue your students learning journey.



< The assembled Edge Connector Board.

This kit contains **over 50 parts** plus an **exclusive tutorial book!**



www.kitronik.co.uk/5603

Description	Code	1+	10+
Kitronik Inventor's Kit for the BBC micro:bit	5603	£20.79	£19.79
Kitronik Inventor's Kit for the BBC micro:bit - 20 pack	5603-20	£375.00*	

* Just £18.75 per kit!



PLEASE NOTE: The BBC micro:bit is **not** included with the Kitronik Inventor's Kit.

ADD-ON PACKS FOR THE KITRONIK INVENTOR'S KIT

NOISE ADD-ON PACK

The Noise Pack for the Kitronik Inventor's Kit allows budding inventors to further explore the world of sound using their BBC micro:bit. This pack includes components and instructions for students to build a further five experiments for exploring waveforms and amplifiers.

www.kitronik.co.uk/5603-noise



ZIP LEDs ADD-ON PACK

This add-on pack for the Inventors Kit is a great way to learn about the world of ZIP LEDs. ZIP LEDs are addressable light emitting diodes, each LED contains three colour chips (red, green and blue) and a tiny microcontroller. Most consumer electronics rely on LEDs to provide instant visual feedback for the user. There are ten experiments, with nine in the booklet and another online.

www.kitronik.co.uk/5603-zip



DIGITAL LOGIC ADD-ON PACK **NEW!**

Join the digital revolution and get up to speed with logic gates and truth tables. This pack includes components and instructions for students to build a further seven experiments for exploring basic digital logic.

www.kitronik.co.uk/5653



Description	Code	1+	10+	50+
Noise Add-On Pack for the Inventor's Kit	5603-NOISE	£10.75	£9.85	£8.90
ZIP LEDs Add-On Pack for the Inventor's Kit	5603-ZIP	£12.00	£11.00	£10.00
Digital Logic Add-On Pack for the Inventor's Kit NEW!	5653	£8.50	£7.85	£7.50



PLEASE NOTE: These add-on packs require the Kitronik Inventor's Kit.

KITRONIK DISCOVERY KIT FOR THE BBC micro:bit

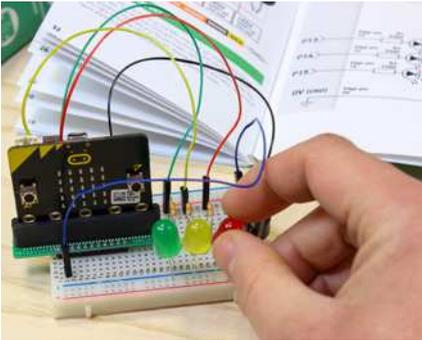
NEW!

This kit is a great way to get started with both programming and electronics. The kit contains five experiments that start very simply, building up to simulating real world systems as confidence grows.

The booklet included assumes no prior knowledge and contains detailed information about everything the new user will need to know. It covers everything from using a prototyping board to how to use the Microsoft MakeCode Editor, and everything in between. This kit is ideal for students and teachers who are new to the micro:bit, electronics, and coding.



The kit contains five experiments and all of the components required to complete them. Each experiment has: a complete code walk-through, a circuit diagram, a top-down breadboard view, full explanations of what is happening, and how the electronics work.



< Getting into coding with a breadboard.

This kit contains **29 parts** plus an **exclusive tutorial book!**



www.kitronik.co.uk/5666

Description	Code	1+	10+	50+
Kitronik Discovery Kit for the BBC micro:bit	5666	£10.00	£9.00	£8.00



PLEASE NOTE: The BBC micro:bit is **not** included with the Kitronik Discovery Kit.

WHAT IS INCLUDED WITH THE DISCOVERY KIT?



Made For micro:bit

No tools required, just slot in and you're ready to go.



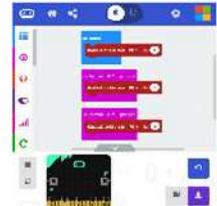
Five Fun Experiments

Five experiments to take you from complete novice to simulating real-world systems.



Detailed Tutorial Book

Step-by-step code and build instructions with clear pictures help you to get going quickly.



Simple Code

Microsoft MakeCode Editor is as easy as 1, 2, 3. Just click, drag and drop



Simple Build

No soldering here! Simply slot the components into the breadboard...and pull them right out again.



Further Learning

Think you've got it all solved? Push yourself with extension challenges after every experiment.



Build New Projects

Unleash your imagination and make your own circuits on the reusable prototyping system.



Electronics Explained

Clear circuit diagrams and explanations make getting to grips with electronics easy.

KITRONIK :MOVE MOTOR FOR THE BBC micro:bit

NEW!

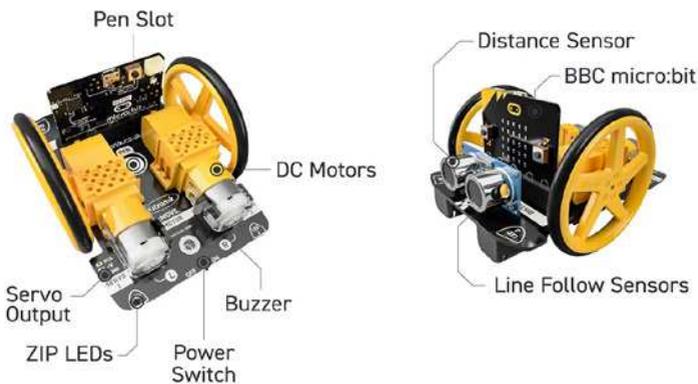
The :MOVE Motor for the BBC micro:bit provides a fun introduction to buggy robotics. Learn about movement, how to utilise light and sound, obstacle detection and avoidance, and how to code :MOVE Motor to follow a line. When used in conjunction with the micro:bit's radio features, the possibilities are endless.

Attached to the chassis are two bi-directional DC motors with variable speed control. The wheels have rubber tyres and are a simple push-fit onto the motor shafts. Slot a BBC micro:bit into the edge connector and you are ready to code. There is no other assembly required and no tools required.

There are built-in battery holders for 4x AA batteries. This provides a regulated voltage supply to power the BBC micro:bit which is fed into the edge connector. There is also a power switch to conserve the batteries when the buggy is not in use. The buggy is supported by a range of learning resources that are available on our website.


www.kitronik.co.uk/5683

Description	Code	1+	10+
Kitronik :MOVE Motor for the BBC micro:bit	5683	£20.95	£19.95
Kitronik :MOVE Motor for the BBC micro:bit – Pack of 20	5695	£380.00	



PLEASE NOTE: The BBC micro:bit is **not** included with the Kitronik :MOVE Motor.



Made For micro:bit
From Beginner to Expert with Custom MakeCode blocks and example Python code.



ZIP LEDS
Light up your coding with 4 fully controllable RGB LEDs. Add indicators, headlights or Emergency Vehicle Lights



Detailed Tutorials
Step-by-step tutorials to help make learning fun and easy



Simple Code
Microsoft MakeCode Editor is as easy as 1, 2, 3. Just click, drag and drop.



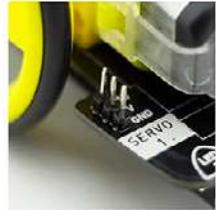
Sound the Horn
Use the Piezo Buzzer to beep the horn, or sound a siren



Packed with sensors
Integrated Ultrasonic and Line Following sensors for out of the box autonomy



Designed for Drawing
Add a pen to unleash your creative side



Servo Connections
Expand your control by plugging in servos to dedicated headers

BLACK ELECTRICAL TAPE, 12MM X 20M

NEW!

This black insulation tape is ideal for creating line following paths for the buggy. It is 12mm wide by 20m long.



www.kitronik.co.uk/26118

Code	1+
26118	£1.60

:MOVE MAT LINE FOLLOWING & ACTIVITY MAPS - A1 SIZE

NEW!

This mat can be used for fun, or as part of a project in the classroom. It has a line following track on one side and a mock-up of a town on the other.



www.kitronik.co.uk/46165

Code	1+	10+
46165	£4.00	£3.50

MK2 ADD-ON PACKS FOR THE :MOVE mini



Lift, carry and move stuff with the :MOVE mini MK2 ! These tipper, bumper and bulldozer add-on packs mean the :MOVE mini can now do even more.

i These products require :MOVE min (fits both MK1 and MK2) and micro:bit, both sold separately.

e www.kitronik.co.uk/5671

e www.kitronik.co.uk/5658

e www.kitronik.co.uk/5670

Description		Code	1+	10+	50+
Bulldozer add-on for the :MOVE mini MK2	i Soldering required.	5671	£7.50	£6.75	£6.15
Bumper add-on for the :MOVE mini MK2		5658	£1.65	£1.45	£1.30
Tipper trailer add-on for the :MOVE mini MK2	i Soldering required.	5670	£10.90	£9.90	£8.90

:MOVE mini TEACHER RESOURCES

We have been creating an ever increasing range of resources for the :MOVE mini kit. **Here is a selection of the latest additions:**

GUIDE FOR CODING INDICATORS

ROBOTIC LESSON PLANS

DRAWING WITH THE :MOVE mini

All of the resources can be found on the product page:

e www.kitronik.co.uk/5652



LINE FOLLOWING ADD-ON FOR :MOVE Mini MK2

Add line following functionality to the Kitronik :MOVE mini buggy for the micro:bit with this easy to assemble add-on kit. The add-on comes with all the parts required to add line following functionality to the :MOVE mini (MK1 and MK2) and does not require any soldering. Once built, the sensitivity of the left and right sensors can be individually tweaked to ensure smooth operation on the surface / floor you are using.

No soldering is required but the kit does require some mechanical assembly.

Example test code is available for download. By default the code will cause the buggy to follow a dark line on a light background but the code can be altered to do the opposite.

i This product requires :MOVE mini buggy (fits both MK1 and MK2) and micro:bit, both sold separately.

e www.kitronik.co.uk/5659



Description	Code	1+	10+	50+
Line following add-on for :MOVE mini MK2	5659	£10.00	£8.33	£8.15

:MOVE SENSOR INTERFACE BOARD FOR THE BBC micro:bit

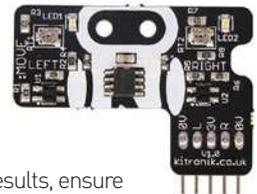
This board acts as a breakout board for the micro:bit while it is attached to a Servo:Lite board and allows you to add things such as line following boards, sensors, and much more.



Code	1+	10+	50+
5628	£5.42	£5.10	£4.60

:MOVE LINE FOLLOWING BOARD

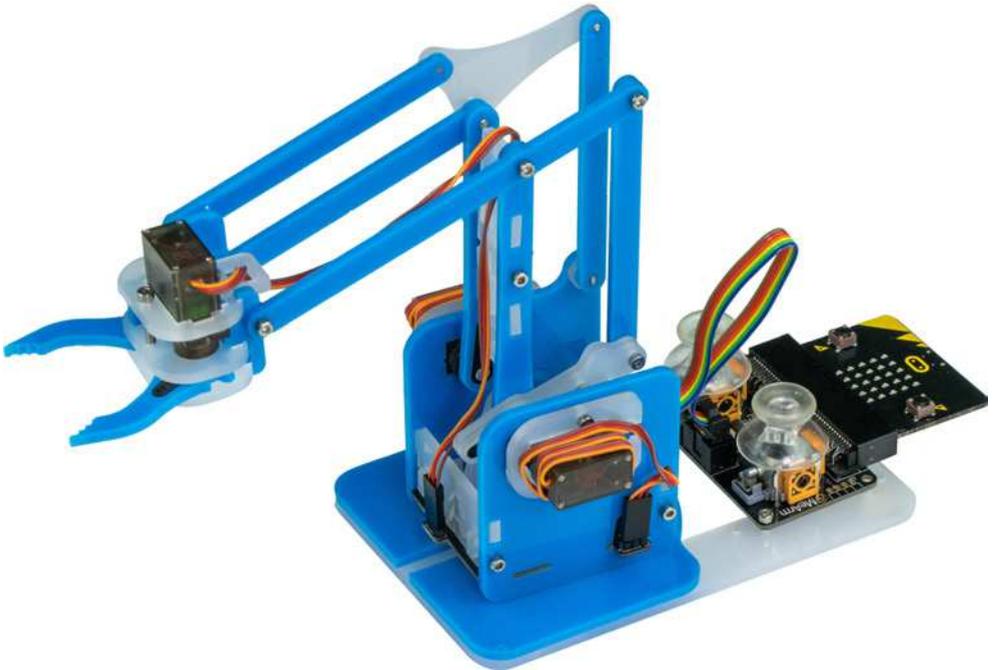
This board can be used to either follow a dark line on a light background or a light line on a dark background. For best results, ensure there is approx. 5mm clearance between the bottom of the board and the driving surface. The sensitivity of the line following can be adjusted via the two on-board pots, one for each detector.



Code	1+	10+	50+
5629	£5.83	£5.00	£4.75

MeArm FOR THE BBC micro:bit

The MeArm is a robot arm kit that you can build with nothing but a hex key (included) and enthusiasm (you need to provide your own). This version has been optimised for use with the BBC micro:bit. It comes with all of the parts needed to build your very own robot arm and a control PCB for adding a BBC micro:bit (not included) to control the MeArm. It is a perfect desktop teaching aid which is suitable for a wide range of coding challenges.



Requires 4x AA batteries, available separately.



www.kitronik.co.uk/4505

Description	Code	1+
MeArm robot BBC micro:bit kit – blue	4505	£58.33
MeArm robot BBC micro:bit kit – orange	4506	£58.33



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

SIMPLE ROBOTICS KIT FOR THE BBC micro:bit

NEW!

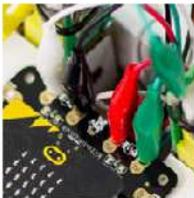
Enter the world of robotics with our Simple Robotics kit and build your own easy build microbit controlled robot. It has been designed, from the ground up, to be simple to build by even the youngest of fingers. From its one piece cardboard chassis to its clip lead connections, everything goes together in a way that is as free from frustration as possible.

The kit of parts is accompanied by a detailed set of instructions that will not only walk you through the assembly, but it also covers the coding in detail. Even if you aren't confident or technical in nature, you will have no difficulties assembling and using this wonderful kit.



www.kitronik.co.uk/5665

Description	Code	1+	10+
Simple Robotics Kit - single pack	5665	£24.95	£22.95



Clippable Electronics

Get to the action sooner with super quick croc clip connections.



Simple Build

No superpowers needed to build this robot. Simply fold and drop in the electronics!



Simple Code

Microsoft MakeCode Editor is as easy as 1,2,3. Code, load and hit the road!



Detailed Tutorial Book

Your obstacle course awaits, use our fun tutorial book to get your robot coded & ready for action.



Bonus Tutorials

Do even more with our free online tutorials like bump & spin!



Customisable

Decorate, customise and modify your robot. Get even more creative and make a completely new robot body!



Make Other Projects

Unleash your imagination, and build your own robotic projects out of cardboard!



Add Ons

Lights, motors, action! Add headlights or add our GAMF Controller for some remote control fun!

LESSON IN A BOX® SIMPLE ROBOTICS

NEW!

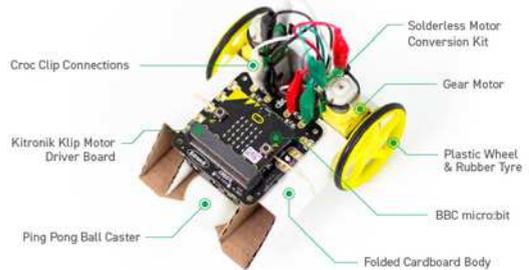
The Lesson in a Box (Simple Robotics) is a complete set of electronics and teaching resources to enable successful cross-curricular lessons with minimal teacher effort. The kit and teaching resources have been tried and tested by real pupils and developed by real teachers to save you time. We know how busy you are!



All of the teaching resources are set out in a teacher, 'user-friendly' way, including technicians notes, lesson plans, resources, workbooks or worksheets and much more!

i Features 10 student and 1 teacher sets supplied in a large reusable Gratnell's tray.

www.kitronik.co.uk/5657



Description	Code	1+	5+
Kitronik Lesson in a Box® Simple Robotics	5657	£399.95	£359.95

SIMPLE ROBOTICS CARDBOARD CHASSIS - 25 PACK

NEW!

As the Lesson in a Box Simple Robotics pack is designed to allow students to customise their robotics creations, we have created a refill pack of cardboard chassis so that each class can add their own flare to their project.



www.kitronik.co.uk/2063

Description	Code	1+
Simple Robotics Cardboard Chassis - 25 pack	2063	£9.99



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

HALO HD FOR THE BBC micro:bit

NEW!

The Halo HD incorporates 60 individually addressable full colour ZIP LEDs, a microphone, a speaker, and a real time clock module. This means that the Halo HD can display a huge spectrum of colours, and make noises, which can be made to react to sound and time.

The micro:bit slots into the Halo HD and is powered via the 3 x AA battery cage on the back of the product. The P1 and P2 micro:bit pins are also broken out to 0.1" pads along with power and GND. This allows for additional connections to components such as servo motors.



The Halo V2 requires 3 x AA Batteries and a BBC micro:bit (not included).



www.kitronik.co.uk/5672

Description	Code	1+	10+	50+
Halo HD for the BBC micro:bit	5672	£21.50	£19.65	£17.85

60 Individually Addressable Full Colour ZIP LEDs

2x M3 Mounting Holes

Piezo Buzzer

Power Switch

Real Time Clock

Integrated Microphone

BBC micro:bit Edge Connector

micro:bit Breakout Pin 1

Pads for JST Connector
(User Addition)

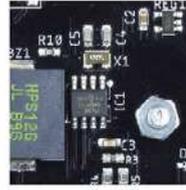
micro:bit Breakout Pin 2



Made for BBC micro:bit
The ZIP Halo HD is controlled via BBC micro:bit. Simply dock into the edge connector.



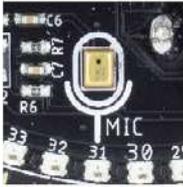
60 ZIP LEDs
Featuring 60 individually addressable, full colour, ZIP LEDs.



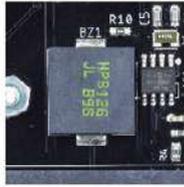
Real Time Clock
Keep track of time with the onboard crystal.



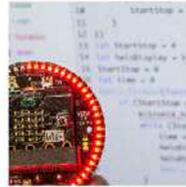
Built-in Battery Cage
Integrated 3xAAA Battery holder for portable power.



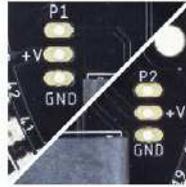
Integrated Microphone
Code a clap controlled lamp or create a light show for your favourite music.



Buzzer
Loud piezo sounder for audio feedback.



Project Examples
Sunrise alarm clocks, sound meters & more.



Expandable I/O
Add additional inputs and outputs for more advanced projects.

ALARM CLOCK KIT WITH ZIP HALO HD FOR THE BBC micro:bit

NEW!

This kit provides a fun introduction to features of the Halo HD. It contains a modified version of the Halo HD, all of the parts required to build the clock, and also power accessories. It also includes an easy to follow tutorial book which will guide you through building your clock & checking all the LEDs are working correctly with some test code.

Power is provided via a 2.1mm barrel jack connection and there is also a coin cell holder fitted to the rear of the board. When a coin cell battery is inserted, it will then provide power to the clock chip when no power is being supplied to Halo HD.

i The BBC micro:bit is **NOT** included with this kit.



www.kitronik.co.uk/5681

b An optional power supply is available, but any 1A USB (Type A) unit will be suitable.

Description	Code	1+	10+
Halo HD Alarm Clock Kit	NEW! 5681	£30.00	£27.50
Type A USB Power Supply - UK Mains 1A	2261	£4.95	£4.75

LESSON IN A BOX® VISUAL COMPUTING PACK

The Lesson in a Box Visual Computing pack for micro:bit is designed to provide a simple solution for teaching both computing and cross curricular lessons at KS3 / KS4. The lessons are designed around tasks that provide the student with some form of visual feedback. Examples include lighting within cultures, visualising data and seeing earthquakes.

The **teaching resources** included in this pack are set out in a 'teacher-friendly' way, with sufficient detail to enable you to 'lift' them, photocopy them and run your lesson(s) with minimal fuss straight out of the box.



www.kitronik.co.uk/5667



Cross-Curricular

Includes lessons for Design & Technology, Computing, Science, Geography plus 2 enrichment challenges.



Just Add micro:bits

The box includes everything else you need to get started with lessons promptly.



Designed by Teachers

Kitronik worked alongside award winning teachers to ensure the lessons are both relevant & engaging.



Curriculum Linked

Each lesson has suggested specification links to national curriculums.



Lesson Resources

Schemes of work, Lesson Plans, Slideshows, Project Books, Worksheets, Build Posters & more.



Digital Versions

All of the lessons are provided on a USB drive in editable formats for you to print, photocopy & modify.



Tried & Tested

Tested in real classrooms by real pupils to ensure the lessons are suitable for all.



School-Friendly

Packaged into a reusable Gratnells Tray for a quick & tidy classroom.

Description	Code	1+	5+
Kitronik Lesson in a Box® Visual Computing Pack	5667	£399.95	£359.95

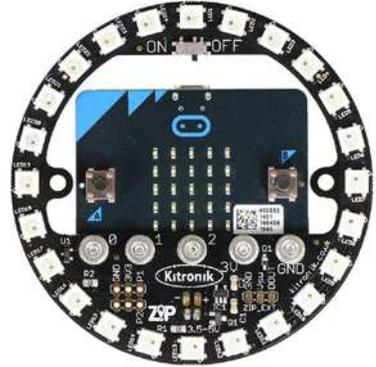
HALO FOR THE BBC micro:bit

Add some colour to your next coding project with our Halo board for the BBC micro:bit. The Halo incorporates 24 individually addressable full colour ZIP LEDs. This means that each LED can display a huge spectrum of colours, allowing amazing colourful effects to be achieved.

The Halo bolts directly onto the BBC micro:bit using five bolts which are secure and robust. The board also has extension connector pads (0.1" pitch) allowing more ZIP LEDs to be connected. The P1 and P2 micro:bit pins are also broken out to 0.1" pads along with power and GND. This allows for additional connections to components such as servo motors.

 www.kitronik.co.uk/5625

 The Halo takes a supply voltage of 3.5V-5V and provides a regulated power supply to BBC micro:bit. Power can be connected using the JST input using the 3xAAA battery holder, or LiPo battery (both listed below), or JST lead (listed on page 153). Alternatively, you can solder a power supply directly to the solder pads on the PCB.



Programming the ZIP LEDs is easy using the **Microsoft MakeCode Block editor**.

Learn how with our guide:  www.kitronik.co.uk/codezip

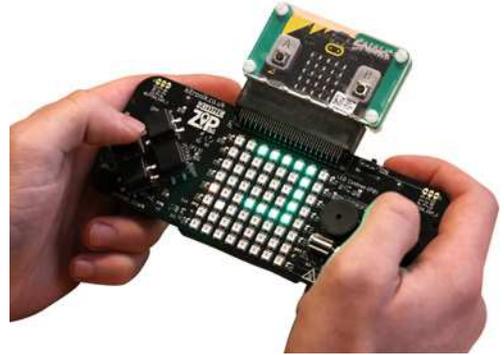
Description	Code	1+	10+	50+	100+
Halo for the BBC micro:bit	5625	£11.50	£10.50	£9.50	
Polymer Lithium Ion Battery (3.7V, 1Ah)	4652	£4.25	£3.85		£3.50
3x AAA Battery Box with Switch and JST Connector	2224	£1.30	£1.20		£0.95



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

KITRONIK :GAME ZIP 64 FOR THE BBC micro:bit

The Kitronik :GAME ZIP 64 is the ultimate retro gaming accessory for the BBC micro:bit. It has been designed to be an all-in-one handheld gaming platform, which also includes a built in 64 (8x8) individually addressable, full colour ZIP LED screen. It also features on-board sound, 4 x directional buttons, 2 fire buttons, haptic feedback, and breakout points so shoulder buttons or I2C devices can be added. All of these features are fully programmable.



Requires 3 x AA batteries.



www.kitronik.co.uk/5626

Description	Code	1+	10+	50+
Kitronik :GAME ZIP 64 for the BBC micro:bit	5626	£29.95	£27.95	
Kitronik :GAME ZIP 64 laser cut cover – clear	5639	£2.99	£2.79	£2.45

KITRONIK :GAME CONTROLLER FOR THE BBC micro:bit

The Kitronik :GAME Controller for the BBC micro:bit is a retro gaming accessory for the BBC micro:bit. It is a programmable gamepad-style controller enabling a better gaming experience on the micro:bit itself, or the ability to control other devices over micro:bit radio.

The :GAME Controller is similar in design and features to the :GAME ZIP 64, only without the ZIP LED screen. This offers great value if the micro:bit's own LED matrix is sufficient for the game or when it will be used to control other devices such as robots and buggies. It will also be much lighter on power consumption than its larger/older sibling.



www.kitronik.co.uk/5644

Description	Code	1+	10+	50+
Kitronik :GAME Controller for the BBC micro:bit	5644	£12.50	£11.00	£10.15

WONDERING HOW TO USE THE :GAME ZIP 64 IN THE CLASSROOM?

We have that covered with our range of teacher resources:



www.kitronik.co.uk/5626

KITRONIK :GAME ZIP 64 FOR THE BBC micro:bit CLASS PACK

The :GAME ZIP 64 class pack is a super starter for simple game programming in the classroom.

Containing 10 of our fantastic :GAME ZIP 64 hand held gaming platforms, USB Cables for programming, all the batteries you'll need, and storage slots for ten BBC micro:bits (not included) this the best way to get started with handheld gaming. The sturdy storage solution from Gratnell's means lessons can be taught then easily packed away, keeping your kit safe and secure!

Example game code and five lesson plans are available from our website.



www.kitronik.co.uk/5626-10

Description	Code	1+
Kitronik :GAME ZIP 64 for the BBC micro:bit class pack	5626-10	£280.00



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

EDGE CONNECTOR BREAKOUT BOARD FOR THE BBC micro:bit

This breakout board has been designed to offer an easy way to connect additional circuits and hardware to the pins on the edge of the BBC micro:bit. It provides access to a large number of the BBC micro:bit processor pins, allowing a lot of extra functionality to be added.

Requires soldering.



www.kitronik.co.uk/5601

Code	1+	10+
5601	£2.60	£2.10

EDGE CONNECTOR BREAKOUT BOARD FOR THE BBC micro:bit – PRE-BUILT

This is a 'pre-built' version of our Edge Connector Breakout Board and is ideal for users who do not want to solder all of the pin connections. It is also supplied with double row of pin connectors fitted, making it ideal for use with male to female jumper wires.



www.kitronik.co.uk/5601b

Code	1+	10+	50+
5601B	£4.16	£3.83	£3.35

PROTOTYPING SYSTEM FOR THE BBC micro:bit



This is a great way to start making circuits and making experiments. It gives access to the pins on the bottom of the BBC micro:bit using our specially designed Edge Connector Breakout Board. This is used in conjunction with a Small Prototype Breadboard which makes it easy to connect additional components using the included jumper wires. **No soldering required.**

www.kitronik.co.uk/5609

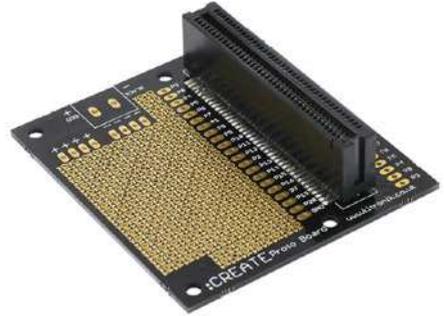
Description	Code	1+	10+	50+
Prototyping System for the BBC micro:bit	5609	£12.46	£11.21	£10.10



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

:CREATE PROTO BOARD FOR THE BBC micro:bit

The :CREATE Proto Board is perfect for making more permanent prototypes with your BBC micro:bit. The board comes with a presoldered header which allows you to easily access all of the important pins on the bottom edge of the BBC micro:bit. Attaching components to the :CREATE board is made easy with predrilled holes and an innovative pattern of solder pads, which allows you to use through hole and surface mount components with ease.



www.kitronik.co.uk/5634

Description	Code	1+	10+	50+
:CREATE Proto Board for the BBC micro:bit	5634	£4.99	£4.49	£4.05

BREADBOARD BREAKOUT FOR THE BBC micro:bit

NEW!

This breakout board has been designed to offer an easy way to connect additional circuits and hardware to the pins on the edge of the BBC micro:bit using a breadboard. The micro:bit slots into the edge connector on the top of the PCB and the pins fit onto a standard breadboard (sold separately). A pin label sticker is included.



www.kitronik.co.uk/5664

Code	1+	10+	50+
5664	£4.00	£3.60	£3.25

TERMINAL BLOCK BREAKOUT BOARD FOR THE BBC micro:bit

The Terminal breakout board for BBC micro:bit breaks out all the signal & power pins on the micro:bit to terminal blocks for a more permanent solderless solution. It features a terminal block breakout point for each pin, a switch-controlled input block, and two output power blocks.



www.kitronik.co.uk/5651

Code	1+	10+	50+
5651	£8.15	£7.35	£6.65

:VIEW text32 LCD SCREEN FOR THE BBC micro:bit

Get meaningful text readouts from your micro:bit projects with the Kitronik :VIEW Text32, a 32 character 2 line display that has a micro:bit style edge connector.

On the back of the :VIEW Text32 is a 3 x AAA battery holder to provide power to the :VIEW Text32, the attached micro:bit, and the replicated edge connector. There is a power switch for turning the battery supply on and off. The replicated edge connector can supply 90mA (as per the normal micro:bit). Custom blocks for the MakeCode are available.



^ Example use.



www.kitronik.co.uk/5650

Description	Code	1+	10+	50+
:VIEW text32 LCD Screen for the BBC micro:bit	5650	£16.00	£15.00	£14.00

SERVO:LITE BOARD FOR THE BBC micro:bit

The Servo:Lite board for the BBC micro:bit is a simple board that allows you to easily connect and control low power servo motors (servos must be capable of operating at 3.3V) using the BBC micro:bit. It is connected to the micro:bit using five bolts.



< The board in use with a servo.



- Features:**
- Connect two servos in standard configuration and can drive up to 3 servos if the addressable 'ZIP' LEDs aren't needed.
 - Powered by 3 AAA batteries and also supplies power to the BBC micro:bit.
 - On / off switch.
 - 5 x RGB addressable ZIP LEDs (NeoPixel compatible). Additional external ZIP LEDs can be connected to the board.

KITRONIK CUSTOM BLOCKS AVAILABLE FOR THIS BOARD!



www.kitronik.co.uk/kitronik-blocks



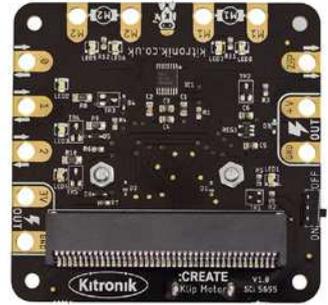
www.kitronik.co.uk/5623

Description	Code	1+	10+	50+
Servo:Lite board for the BBC micro:bit	5623	£9.50	£8.75	£8.25

KLIP MOTOR DRIVER FOR THE BBC micro:bit

The Klip Motor Driver for the BBC micro:bit allows you to do more than just drive motors. It breaks out pins 0, 1, 2, 3V & GND from the micro:bit & connects to ZIP LEDs.

Power is provided by a switch controlled battery supply (3 x AA batteries, not included), which also powers the micro:bit. Each output has its own indicator LED. **No soldering required.**



< The Klip Motor Driver in use with other Kitronik products.



www.kitronik.co.uk/5655

Description	Code	1+	10+	50+
Klip Motor Driver for the BBC micro:bit	5655	£12.50	£11.75	£10.65

KITRONIK CLIPPABLE DETECTOR BOARD

NEW!

This Clippable Detector Board detects light, objects and can follow lines. The board is compatible directly with the micro:bit and the Klip Motor Board. The board works by using three evenly spaced phototransistors to detect the reflectiveness of different surfaces. The sensors provide an analogue voltage to the microbit. Five connections are required for full operation. These connections match those on a micro:bit and can be attached using either bolts or croc-clip leads.

The Clippable Detector board in use with a micro:bit >



www.kitronik.co.uk/5678



Description	Code	1+	10+	50+
Kitronik Clippable Detector Board V1.0	5678	£3.65	£3.25	£2.95



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

COMPACT MOTOR DRIVER BOARD FOR THE BBC micro:bit

NEW!

This board provides a simple way to add motor driving capability to a BBC micro:bit. It allows two motors to be driven with full forward, reverse & stop control. It has terminal blocks to connect four input devices and a regulated 3V supply is fed in to the 80 way connector to power the inserted BBC micro:bit. The board also includes a power switch and a power indication LED.


www.kitronik.co.uk/5698

Description	Code	1+	10+	50+
Compact Motor Driver Board for the BBC micro:bit	5698	£7.50	£6.75	£6.25

COMPACT 16 SERVO DRIVER BOARD FOR THE BBC micro:bit

NEW!

This compact 16 servo driver board for the micro:bit allows up to 16 Remote Control (RC) servos to be driven simultaneously. It is based on the PCA9865 driver IC. The board produces a regulated power supply for the micro:bit, removing the need to power it directly. Power (maximum 12V) can be supplied to the board via either the dedicated screw connections, or the 0.1" pitch Power connector. The board also includes a power switch and a power indication LED.


www.kitronik.co.uk/5694

Description	Code	1+	10+	50+
Compact 16 Servo Driver Board for the BBC micro:bit	5694	£9.00	£8.25	£7.50

COMPACT ROBOTICS BOARD FOR BBC micro:bit

NEW!

This board is perfect for any micro:bit based robotics project. It can drive 4 DC motors with full forward, reverse and stop control, plus it can also control 8 servo motors. The DC motor connections use terminal blocks and there are pin headers for the servo connections. The board works from a 3V to 10.8V supply voltage and provides a 3V regulated supply to power the micro:bit. The board also includes a power switch and a power indication LED.


www.kitronik.co.uk/5693

Description	Code	1+	10+	50+
Compact Robotics Board for the BBC micro:bit	5693	£11.00	£10.00	£9.00

MOTOR DRIVER BOARD FOR THE BBC micro:bit - V2

This board provides a simple way to add motor driving capability to a BBC micro:bit. It allows two motors to be driven with full forward, reverse & stop control. It has terminal blocks to connect four input devices and a regulated 3V supply is fed in to the 80 way connector to power the inserted BBC micro:bit.


www.kitronik.co.uk/5620

Description	Code	1+	10+	50+
Motor Driver Board for the BBC micro:bit - V2	5620	£9.65	£7.95	£7.55

'HAMBURGER' MINI SPEAKER

This 3W Mini Speaker is a great, economical speaker option for any project needing stand-alone sound within a small footprint. It is also an ideal speaker choice for BBC micro:bit projects as it will work directly with our audio cable for the BBC micro:bit (see below).

The speaker features a built-in rechargeable lithium polymer battery for portable applications, a 3.5mm stereo jack for connecting to the audio source and has two volume options (quiet and loud).


www.kitronik.co.uk/3340

Description	Code	1+
'Hamburger' Mini Speaker	3340	£4.95

AUDIO CABLE FOR THE BBC micro:bit

Simply connect the crocodile clips to the BBC micro:bit, plug headphones into the 3.5mm socket, and you are ready to code some music.


www.kitronik.co.uk/5622


Description	Code	1+	10+	50+
Audio Cable for the BBC micro:bit	5622	£2.20	£1.80	£1.65

MI:sound BOARD

The MI:sound board is a speaker board for the BBC micro:bit. It features on-board; speaker, CR2032 battery holder, thumb wheel volume control and an easy access on/off switch. The MI:sound board can either be powered by the CR2032 battery (provided) or via the micro:bit USB or JST connections.

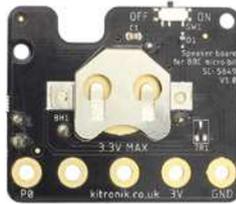


< Example use.

To use the MI:sound speaker board, the BBC micro:bit should be attached using the supplied bolts, spacers and nuts as shown to the right. Only Pin 0, 3V and GND need to be connected. Crocodile clips can also be used.

When assembled, the MI:sound board is connected directly to the 3V, GND and P0 connections on the micro:bit.

The 3V and GND connections provide power to the micro:bit. The built in speaker is connected to P0, which is the default output pin when using the audio functions in the Block Editor software. The board has an easy to access on/off switch, which makes it easy to turn a project on and off, rather than have to disconnect the power supply from the BBC micro:bit.



www.kitronik.co.uk/5649

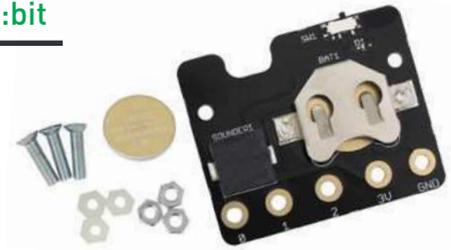
Kit of parts. >

Description	Code	1+	10+	50+
MI:sound board	5649	£5.00	£4.50	£4.15

MI:power BOARD FOR THE BBC micro:bit

This board brings real portability to wearable projects. The stylish, lightweight PCB is designed to fit snugly against the BBC micro:bit and features a **built in buzzer**, 3V coin cell holder and power switch.

It connects directly to the 3V, GND and P0 connections on the BBC micro:bit. The 3V and GND connections provide power and the built in buzzer is connected to P0, which is the default output pin when using the audio functions in the MakeCode Editor software. The mechanical fixings used to connect the board to the BBC micro:bit prevent the battery from being removed, so the battery will remain safely in place. Spacers, fixings and a battery are all provided.



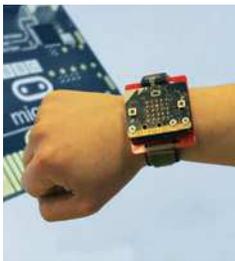
> Example of the MI:power board in use



www.kitronik.co.uk/5610

Description	Code	1+	10+	50+
MI:power board for the BBC micro:bit	5610	£4.15	£3.80	£3.60

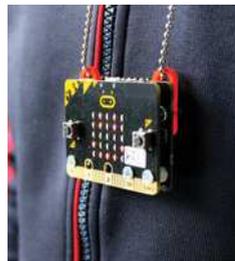
PROJECT IDEAS FOR USING THE MI:power BOARD WITH THE BBC micro:bit



WATCH MOUNT



PLANT SPIKE



LANYARD



BELT MOUNT

Read more & download the cutting files at:



www.kitronik.co.uk/mipowerresources

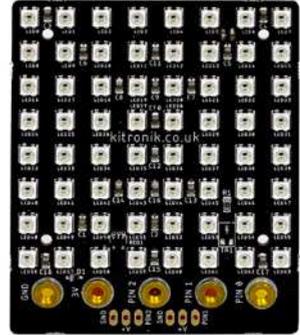


PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

ZIP TILE FOR THE BBC micro:bit

The Kitronik ZIP Tile is an 8 x 8 display panel for the BBC micro:bit. It can scroll text, show all the colours of the rainbow (and more) and multiple Tiles can be linked up to make even bigger displays!

It features 64 colour addressable LEDs arranged in an 8 x 8 grid, ZIP LED expansion points on the left, right and top of the board, and the ability to connect a BBC micro:bit with both bolts and croc clips. It also breaks out P1 & P2 to standard 0.1 (2.54mm) footprints. Each of these pins also have the required supply voltage and GND pads.

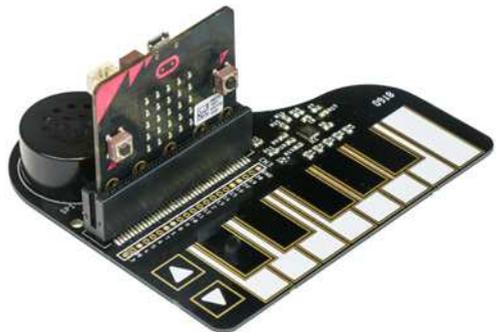


www.kitronik.co.uk/5645

Description	Code	1+	10+	50+
ZIP Tile for the BBC micro:bit	5645	£15.41	£13.85	£12.50

:KLEF PIANO FOR THE BBC micro:bit

Just slot in a micro:bit and use sound generation blocks and code in Microsoft MakeCode to generate tones and sounds. Using 15 capacitive touch keys, including a whole keyboard octave, students can unleash their inner Mozart. It comes fully assembled with a built-in speaker and is ready to use, with **no soldering required**.



 Requires 5V micro-USB power supply.

www.kitronik.co.uk/5631

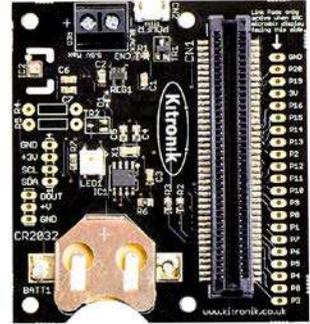
Description	Code	1+	10+	50+
:KLEF Piano for the BBC micro:bit	5631	£15.98	£14.50	£12.95



PLEASE NOTE: The BBC micro:bit is **not** included with the products on this spread.

RTC & KLIMATE BOARD FOR THE BBC micro:bit

The RTC board gives the ability to add the current time and date to a project. The Klimate board contains the RTC functionality and an environmental sensor interface, so you can measure temperature, barometric pressure and humidity. Both boards are MakeCode compatible. CR2032 battery not included.



www.kitronik.co.uk/5635 or /5636

Description	Code	1+	10+	50+
RTC Board for the BBC micro:bit	5635	£8.46	£7.60	£6.95
Klimate Board for the BBC micro:bit	5636	£16.66	£15.00	£13.50

PRONG SOIL MOISTURE SENSOR FOR THE BBC micro:bit

The Kitronik Prong soil moisture sensor for BBC micro:bit is a sensor board that can be directly mounted to a BBC micro:bit to monitor moisture present in soil.

The Prong is powered from the 3V supply of the BBC micro:bit. Use either the USB or JST connector on the BBC micro:bit to power the circuit. Both the Prong and BBC micro:bit can also be powered from the MI:power board to create a compact stand alone unit. Includes mounting nuts.



www.kitronik.co.uk/5647



✓ Example of the Prong in use



Description	Code	1+	10+	50+
Prong Soil Moisture Sensor for the BBC micro:bit	5647	£2.64	£2.37	£2.15

KLIP HALO V2.0 FOR THE BBC micro:bit

The Klip Halo V2.0 board for the BBC micro:bit breaks out each of the 19 GPIO pins from the BBC micro:bit, with easily accessible, clearly marked connection points compatible with both crocodile clips and 4mm banana plugs. The edge connector allows simple assembly by inserting the BBC micro:bit into the Klip Halo V2.0.

The Klip Halo V2.0 with comes with two options, a battery cage(BAT) or a JST(JST) connector, and an on/off switch. The switch also turns on / off the power to the 3V connections.



www.kitronik.co.uk/5648-BAT

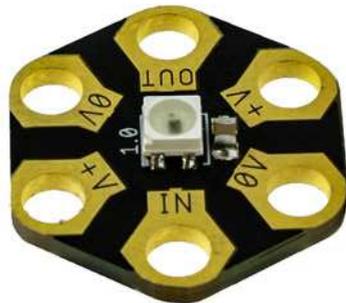


www.kitronik.co.uk/5648-JST

Description	Code	1+	10+	50+
Klip Halo V2.0 with 2x AA Battery Holder	5648-BAT	£7.30	£6.55	£5.95
Klip Halo V2.0 with JST	5648-JST	£6.90	£6.25	£5.65

ZIP HEX LED - PACK OF 5

The ZIP Hex LED is a programmable RGB LED, capable of producing a full spectrum of colours. The can be chained together and easily connected with crocodile leads and used with the Kitronik Klip Halo range. This is just one example of a product that works well with the Klip Halo.



www.kitronik.co.uk/35140

Description	Code	1+	10+
ZIP Hex LED – pack of 5	35140	£4.89	£4.40

MONK MAKES - CLIP ON EXPANSION BOARDS FOR THE BBC micro:bit

This range of micro:bit add-on boards from Monk Makes allows users to add extra functionality to their micro:bit project by simply connecting the add-on board using crocodile 'clip' wires.



SENSOR BOARD FOR micro:bit

The Sensor Board allows you to detect sound levels, temperature, and light levels.

Sound level: It senses sound level with a MEMs, which is a microphone on a chip that also features a pre-amplifier circuit.

Temperature level: The temperature output from the board is a voltage that indicates the temperature.

Light level: The light sensor uses a photo-transistor to measure the light level.



www.kitronik.co.uk/46122

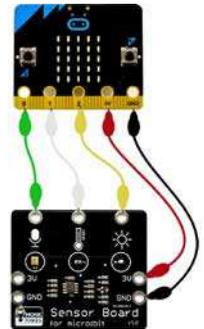
LOW VOLTAGE RELAY FOR micro:bit (SOLID STATE)

The Relay for the BBC micro:bit is a solid-state (no moving parts) relay that allows an output of a micro:bit to turn things on and off. A micro:bit can turn an LED on and off directly, but anything more powerful requires something like a relay or a transistor. Using a transistor to switch something on and off requires a shared ground connection with the micro:bit and a knowledge of electronics that you or your students may not be ready for. This Relay for micro:bit is much easier to use, acting like a simple micro:bit controlled switch.



www.kitronik.co.uk/46123

[Sensor board connection example.](#) >



POWERED SPEAKER BOARD FOR micro:bit

The speaker board is a neat little amplified speaker that connects to your micro:bit with crocodile clips. Despite its diminutive size, the speaker is quite loud.



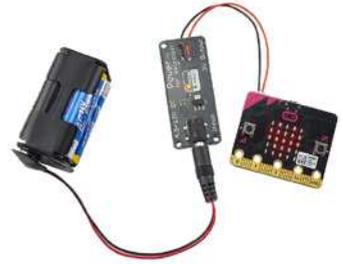
www.kitronik.co.uk/46124

Description	Code	1+
Sensor board for the BBC micro:bit	46122	£6.95
Low voltage relay for the BBC micro:bit	46123	£7.15
Powered speaker for the BBC micro:bit	46124	£6.95

MONK MAKES - POWER BOARD FOR THE BBC micro:bit

NEW!

This board has a standard DC barrel jack socket that takes an input voltage of 4.5 to 12V DC and converts to a regulated 3.3V output that you can use to power your micro:bit using the JST battery connector attached to wires coming from the other end of the board.



www.kitronik.co.uk/46144

Connection example, leads and micro:bit not included. [^](#)

Description	Code	1+
Monk Makes - Power Board for the BBC micro:bit	46144	£6.95

MONK MAKES - SERVO BOARD FOR THE BBC micro:bit

NEW!

This board provides a really easy way to attach up to three servomotors to a micro:bit. The board requires a power supply or battery pack to provide 5 or 6V to the servomotors. It includes a voltage regulator that will supply 3V back to the micro:bit, so that you don't have to power it separately.



www.kitronik.co.uk/46145

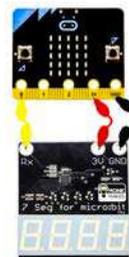
Connection example, leads and micro:bit not included. [^](#)

Description	Code	1+
Monk Makes - Servo Board for the BBC micro:bit	46145	£6.95

MONK MAKES - 7 SEGMENT FOR THE BBC micro:bit

NEW!

The 7-segment for micro:bit is a four digit 7-segment display for micro:bit. You can use it to display numbers, but it can also display letters and other characters, albeit with the limits imposed by the 7 segments of each digit.



www.kitronik.co.uk/46138

Connection example, leads and micro:bit not included. [^](#)

Description	Code	1+	10+
Monk Makes - 7 Segment for the BBC micro:bit	46138	£12.00	£11.69

MONK MAKES - STARTER KIT FOR THE BBC micro:bit

This kit offers users as young as 10 an introduction to learning about connecting electronics to the BBC micro:bit. Uses alligator clips, no soldering required.



www.kitronik.co.uk/46142



Description	Code	1+
Monk Makes - Electronic Starter Kit for the BBC micro:bit	46142	£29.95

MONK MAKES - SERVO KIT FOR THE BBC micro:bit

The Monk Makes Servo kit for micro:bit provides you with a servo board, three servos, battery cage and alligator clips. Just add micro:bit and batteries.



www.kitronik.co.uk/46147



Description	Code	1+
Monk Makes - Servo Kit for the BBC micro:bit	46147	£17.50

MONK MAKES - RGB LED FOR THE BBC micro:bit

The Monk Makes RGB LED for micro:bit provides a colourful add-on to your micro:bit. Connect it up with alligator/crocodile clips and then use the three outputs of your micro:bit to control the red, green and blue channels to mix up any colour of light you want.



www.kitronik.co.uk/46137

Connection example, leads and micro:bit not included. [^](#)

Description	Code	1+	10+
Monk Makes - RGB LED for the BBC micro:bit	46137	£2.75	£2.50

PIMORONI - scroll:bit LED DISPLAY FOR THE BBC micro:bit

This is a little display with a lot of LEDs. It has 119 bright white LEDs, perfect for scrolling messages, animations, graphs and more! Just slot in a micro:bit and code with Microsoft MakeCode Editor or MicroPython. This works in a similar way to the built-in LED matrix on the BBC micro:bit. Comes fully assembled and ready to use, no soldering required.

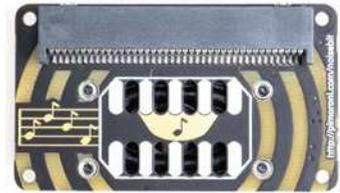


www.kitronik.co.uk/46129

Description	Code	1+
Pimoroni - scroll:bit LED display for the BBC micro:bit	46129	£12.75

PIMORONI - noise:bit ADD-ON FOR THE BBC micro:bit

Just slot in your micro:bit and use sound generation blocks and code in Microsoft MakeCode and MicroPython to generate tone, sounds, speech and add sound to your projects. Comes fully assembled and ready to use, no soldering required.



www.kitronik.co.uk/46163

Description	Code	1+
Pimoroni - noise:bit add-on for the BBC micro:bit	46163	£12.25

PIMORONI - enviro:bit ADD-ON FOR THE BBC micro:bit

Sense the world around you with the enviro:bit! It's loaded with sensors for sound, air and weather, and colour and light. Just slot in a micro:bit and use the Microsoft MakeCode Editor or MicroPython. These sensors work well with the LED matrix on the micro:bit. Comes fully assembled and ready to use, no soldering required.



www.kitronik.co.uk/46133

Description	Code	1+
Pimoroni - enviro:bit add-on for the BBC micro:bit	46133	£18.50

PIMORONI - PINBETWEEN

NEW!

The 40-pin male header on Pinbetween allows connection of extra things to a micro:bit while still using an edge-connector add-on such as our motor driver board for micro:bit. Plug a micro:bit into the edge-connector at the top, attach your micro:bit add-on at the bottom, and then use the handy grouped and labelled pins in-between for whatever you wish!



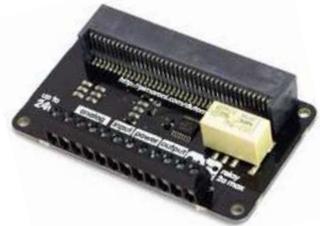
www.kitronik.co.uk/46164

Description	Code	1+
Pimoroni - Pinbetween	46164	£6.10

PIMORONI - automation:bit ADD-ON FOR THE BBC micro:bit

NEW!

Control and monitor your world with the automation:bit Add-On for the BBC micro:bit! It's tolerant of up to 24V, with analogue and digital inputs, outputs, and a relay, so it's ideal for automating low-voltage systems in the home.



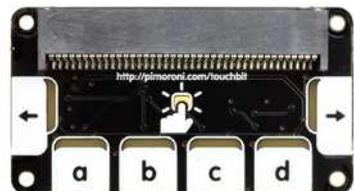
www.kitronik.co.uk/46136

Description	Code	1+
Pimoroni - automation:bit add-on for the BBC micro:bit	46136	£11.45

PIMORONI - touch:bit ADD-ON FOR THE BBC micro:bit

NEW!

The touch:bit features six handy touch-sensitive buttons and LEDs for the micro:bit. Use touch:bit as a controller for games on micro:bit's LED matrix, or combine it with the radio functionality and use it as a controller for a robot. You can easily link functions to specific button presses, have the LEDs on each button light automatically on a touch, or set the LEDs manually.



www.kitronik.co.uk/46139

Description	Code	1+
Pimoroni - touch:bit add-on for the BBC micro:bit	46139	£9.65



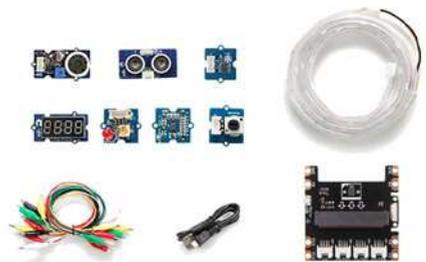
Grove is a modular, standardised connector prototyping system. Grove takes a building block approach to assembling electronics. Compared to breadboard or solder based systems, it is easier to connect, experiment and build with. **Simplifying learning.** The Grove system allows you to build real systems.

The Base unit, generally a microprocessor (like the BBC micro:bit), allows for easy connection of any input or output from Grove modules. Every Grove module typically addresses a single function, such as a simple button or a more complex temperature sensor.

GROVE STARTER KIT FOR THE BBC micro:bit

NEW!

The Grove Inventor's Kit for micro:bit brings endless possibilities to your micro:bit. The core board in this kit is the Grove shield for micro:bit v2.0, with which you can use plenty of Grove modules including sensors, display, actuator to interact with micro:bit. If you've never used and have no idea what Grove is, with Grove, there is no need for soldering or jumper wires. Your prototyping will be easier and much more convenient. **No soldering required.**



Kit contents:

- 12 experiments.
- Breakout board.
- Sensor and output modules.
- Grove connectors and croc clips.

 www.kitronik.co.uk/46150

 Requires BBC micro:bit **(not included)**

Description	Code	1+
Grove Starter Kit for the BBC micro:bit	46150	£57.95

GROVE MODULES

NEW!

Combining Grove modules means you can build a prototype quickly and efficiently.



See our full range of modules with individual descriptions on our website:

www.kitronik.co.uk/grove



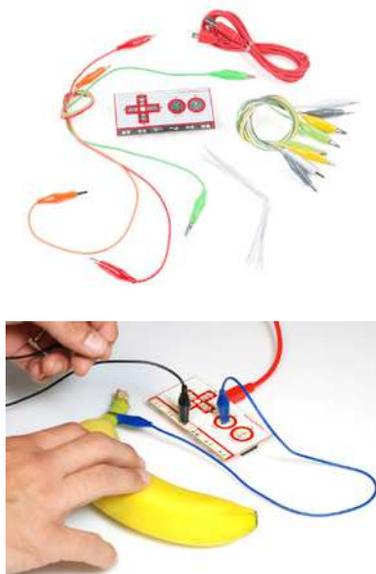
Description	Code	1+	10+
PIR Movement Sensor	46149	£6.45	£5.85
Button / Tactile Switch	46151	£1.60	£1.45
Temperature and Humidity Sensor	46152	£9.65	£9.15
Ultrasonic Distance Sensor	46153	£3.65	£3.55
Connectors 30cm - 5 pack	46154	£3.10	£2.95
LED Red	46155	£1.95	£1.60
LED Blue	46156	£1.95	£1.60
LED Green	46157	£1.95	£1.60
LED White	46162	£1.95	£1.60
LED Red Green & Blue Flashing	46158	£2.20	£2.00
Buzzer	46159	£1.95	£1.65
Grove Shield for the BBC micro:bit	5675	£9.95	£8.95

MAKEY MAKEY CLASSIC

This is the new version of the Makey Makey. You may be the greatest living banana pianist, but how will you ever know if you don't make yourself a banana piano? Using the Makey Makey you can make anything into a key just by connecting a few alligator clips. The Makey Makey Classic by JoyLabz is an invention kit that tricks your computer into thinking that almost anything is a keyboard. This allows you to hook up all kinds of fun things as an input. For example, play Mario with a Play-Doh keyboard or piano with fruit!

 www.kitronik.co.uk/46121

Using the Makey Makey with a banana. >



Description	Code	1+
Makey Makey Classic by JoyLabz	46121	£38.00

MINI.MU MUSIC GLOVE KIT FOR THE BBC micro:bit



> The MINI.MU in use.

 www.kitronik.co.uk/46146

Everything is included to make a musical glove from scratch, with no crafting, coding or electronics knowledge required. Once the first craft and code activity has been completed, the experience really begins. The MINI.MU encourages creative coding, allowing progression from simple block code and 8-bit tunes to more advanced interactions and wireless communication with professional music software.



Description	Code	1+
MINI.MU Music Glove Kit for the BBC micro:bit	46146	£24.99

EDISON – EDUCATIONAL ROBOT

Edison is a programmable robot designed to be a complete STEM teaching resource for coding and robotics education for students from 4 to 16 years of age. The Edison robot is a powerful, engaging tool for teaching children computational thinking and computer programming in a hands-on way. With more built-in sensors (line, light and sound) than any robot in its class, as well as lights, sounds and autonomous behaviour capabilities, Edison makes true robotics education accessible to students of all ages. Free teaching resources are available to download from our website.


www.kitronik.co.uk/46125

Description	Code	1+	10+
Edison V2.0 Robot	46125	£34.99	£32.50

EDCREATE

A 5-in-1 expansion pack construction system. Designed to work with the Edison robot. Consisting of 115 interlocking building blocks, pegs, gears, and other parts, the individual EdCreate pieces are designed with studs and holes which are compatible with Edison robots and any other LEGO brick compatible building system.



< Example robot made with this kit.

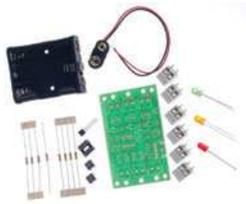


Edison robot sold separately.

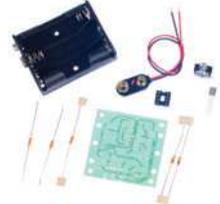

www.kitronik.co.uk/46127

Description	Code	1+	10+
EdCreate Edison robot creators kit	46127	£17.50	£15.99

8 PIN PIC DEVELOPMENT AND PROJECT BOARDS



^ Development board



^ Project board

These boards have been designed to complement each other. The larger development board (once built) can be used as a starting point for a project by attaching inputs and outputs to the board via the terminal blocks. The PIC software can then be developed and the complete solution tested without using a soldering iron. Once students are happy with their design they can transfer the design to the project board, soldering their chosen peripherals into the board. The development board can be reused on future projects. You can connect any device to the outputs of the board including LEDs, sounders, motors etc. The teaching notes for this project include a number of possible projects including: a decision maker, traffic light, timer, quiz buzzer, alarm and a timed fan. Both boards are supplied in kit form.

i Processor not included (see 3726, below).

b Requires 3x AA batteries, available separately.

Description	Code	1+	5+	50+	200+*	300+*
PIC 8 pin development board (2 in, 3 out)	2126	£5.10	£3.90	£3.40	£3.23	£3.06
PIC 8 pin project board (2 in, 3 out)	2127	£2.75	£2.00	£1.80	£1.71	£1.62

* Price shown includes bulk buy discount



PICAXE® DOWNLOAD CABLE

The PICAXE Programming Editor software downloads programs into the PICAXE chip via a very low cost USB download cable. No programmer is required – you simply place the matching 'stereo' socket on the project board and then download the program directly into the PICAXE chip.

Description	Code	1+	5+
USB download cable	3716	£16.50	£16.00



PICAXE-08M2 CHIP

IC Size	Memory (bytes)	Parallel Tasks	Code	1+	25+	100+
08	2048	04	3726	£2.15	£2.00	£1.70



PROGRAMMABLE MUSIC BOX KIT



A simple programming task allows the student to play a tune of their choice when the switch it activated. The kit is compatible with most educational PICs & software. Programming is via a 3.5mm jack interface.

i Processor not included (see page 104).

Requires 3x AA batteries.

Code	1+	5+	50+	200+*	300+*
2122	£4.17	£2.92	£2.62	£2.49	£2.36

* Price shown includes bulk buy discount



CYBERPET KIT

This project enables students to create an electronic pet with LED 'eyes' and a piezo sounder 'voice'. Will react to light (miniature LDR) and touch (push switch). Includes PICAXE-08M2LE chip. **Pack of 5.**

Code	1+	5+
3723	£21.00	£20.00



DICE KIT

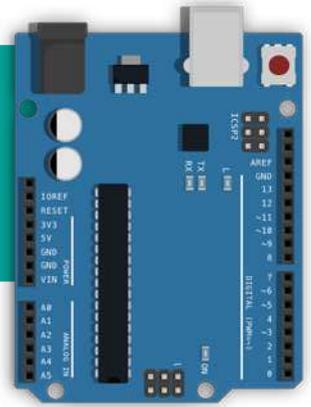
This classic project uses the PIC microcontroller to create an electronic dice. Students can choose to activate the dice by a switch or by adding an LDR. Includes PICAXE-08M2LE chip. **Pack of 5.**

Code	1+	5+
3725	£21.00	£20.00

WHAT IS AN ARDUINO?

Arduino is an open-source programmable electronics platform, which has been designed for anyone making interactive projects. Arduino boards can process inputs from many sensors, and also control outputs such as LEDs and motors.

The Arduino is controlled by the code with which it is programmed. This code is written in the Arduino programming language, using the Arduino development environment. Once complete the code is easily programmed on to the Arduino board using a simple USB lead.



For more information on Arduino, visit:



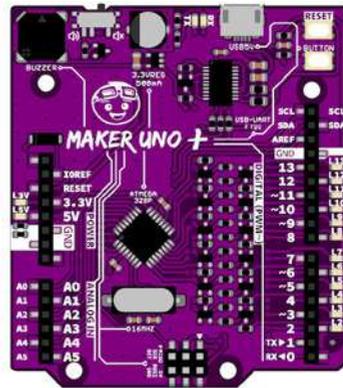
www.kitronik.co.uk/arduino

CYTRON MAKER UNO PLUS

The Maker Uno Plus is a simplified and improved starter board for Arduino programming. It has all of the features of a standard Arduino Uno board, but with some great extras, including 12x LEDs, 1x piezo buzzer, and 1x programmable push button switch. These will help you and your students learn and debug code faster.



www.kitronik.co.uk/5314



Description	Code	1+	10+
Cytron Maker Uno Plus	5314	£13.49	£12.99

KITRONIK INVENTOR'S KIT FOR ARDUINO

This kit is a great way of introducing students to programming & hardware interaction with Arduino.



It contains everything you need to complete 10 experiments, including using LEDs, motors, servo motors, light sensors and capacitors. The easy to follow tutorial book guides the user through everything they need to know about programming an Arduino microcontroller.

It is also a fantastic way of learning how to construct and control electronic circuits. Arduino microcontrollers have a selection of sockets along their edges, and we provide you with the correct connectors to use these easily in conjunction with a breadboard, which in turn makes it easy to connect additional components used in each of the experiments. This is an ideal prototyping platform.

This kit contains **over 50 parts** plus an **exclusive tutorial book!**



www.kitronik.co.uk/5313

Description	Code	1+	10+
Kitronik Inventor's Kit for Arduino	5313	£20.79	£19.79
Kitronik Inventor's Kit for Arduino - pack of 20	NEW! 5313-20	£375.00	
Maker Uno and Kitronik Inventor's Kit for Arduino	5315	£29.95	



PLEASE NOTE: The Arduino is **not** included with the Kitronik Inventor's Kit.

ARCADE FOR MAKECODE ARCADE

NEW!

ARCADE is a programmable gamepad for use with MakeCode Arcade. Develop your coding skills by creating and modding games with Blocks, Python and JavaScript in MakeCode.

The Kitronik ARCADE has been specifically designed to offer the perfect platform for running games. It's packed full of features and has been ergonomically designed for comfort and ease of use. It features a full colour LCD wide viewing angle screen, a piezo sounder for audio feedback, a vibration motor for haptic feedback, 6 gamer input buttons, a menu button, a reset button and an on/off switch. Everything you need for the perfect gaming experience. It also features a software volume control, a USB programming port, and 2 expansion ports for the expert level users.

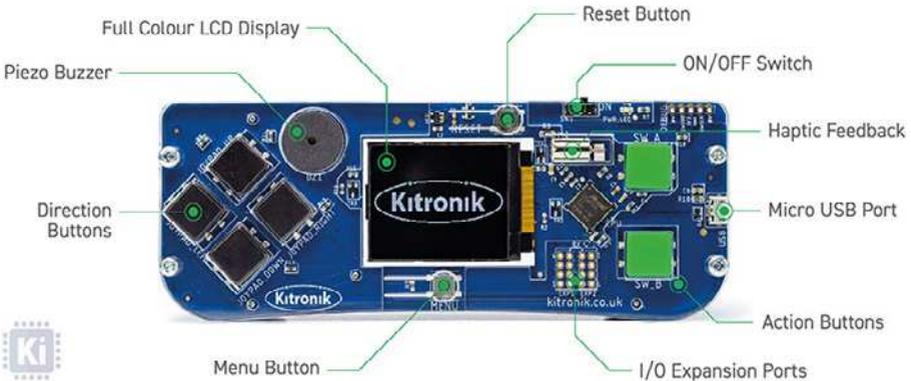


Requires 3x AA batteries, available separately.



www.kitronik.co.uk/5311

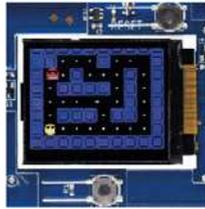
Description	Code	1+	10+
ARCADE for MakeCode Arcade	5311	£29.95	£27.95



PLEASE NOTE: The ARCADE is a self-contained system – just add batteries!



Made For MakeCode
The Kitronik ARCADE is a handheld gamepad for use with the Microsoft MakeCode Arcade editor.



Full Colour LCD
It features a full colour 1.77" LCD wide viewing angle screen.



Programmable Buttons
6 gamer input buttons, a menu button, a reset button and an on/off switch.



Learn To Code
Follow the extensive tutorials or create games from the ground up.



Haptic Feedback
Powerful vibration motor for haptic feedback



Buzzer
Loud piezo sounder for audio feedback



Protective Case
Strong plastic case for increased durability



Expandable I/O
Add additional inputs and outputs for enhanced gaming.

ARCADE CLASS PACK

NEW!

The classroom pack comes with 10 Arcade gamepads, 10 USB noodle cables, a pack of 40 batteries, and is packaged in a reusable Grattnell's tray.



Code	1+
5318	£280.00

ARCADE RETAIL PACK

NEW!

The retail pack comes with a USB noodle cable, batteries, quick start booklet and is packaged in a reusable transparent plastic container.



Code	1+	10+
5319	£33.00	£30.00

04

OTHER KITS & MODULES

SECTION CONTENTS

Clocks & accessories	111 - 113
Fizzbit	114
Solar projects	115
Breakouts, boards & sensors	116
Buggy project kits	117
Gratnell's trays	118
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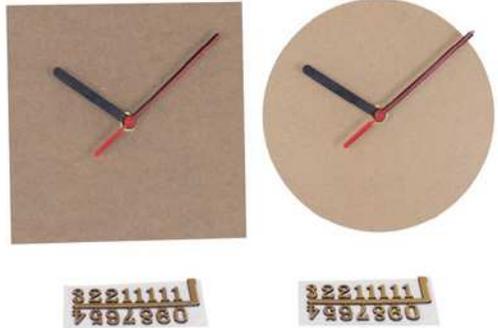


'BUILD A CLOCK' KIT

This kit contains all the parts required to build 20 complete clocks.

Kit contents:

- 20 clock movements.
- 10 square clock faces.
- 10 round clock faces.
- 20 Arabic gilt numerals.



www.kitronik.co.uk/2804-a

Description	Code	1+	10+
Build a clock kit - 20 pack	2804-A	£45.00	£42.00

CLOCK FACES

Get your clock project off to a perfect start. Made from 4mm MDF, these pre-cut and drilled clock faces fit perfectly with our quartz clock movement. They are supplied in packs of 10 and available in a square or round design.

ROUND CLOCK FACES



SQUARE CLOCK FACES



Description	Code	1+
10 round clock faces	2802-10	£5.95

Description	Code	1+
10 square clock faces	2803-10	£5.95

QUARTZ CLOCK MOVEMENT

A precision quartz clock movement, supplied complete with hour, minute and second hands. The unit is easy to mount with a centre fixing and includes the fixing hardware.

Supplied as single, in a box of 20, in a tray of 100, or in a box of 500.

 The clock will typically run for two years off a single AA size battery (available separately).

 Size 55 x 55 x 15mm.
Max panel thickness 12mm.
Hand dimensions: Hour 62mm; Minute 90mm; Second 90mm (measured from centre of clock movement).



From
75p each!

Description	Code	1+
Single clock movement	2801-01	£1.53
Box of 20 clock movements	2801-20	£21.00
Tray of 100 clock movements	2801-100	£85.00
Box of 500 clock movements	2801-500	£375.00



ARABIC GILT NUMERALS

A set of 20mm self adhesive Arabic gilt numerals.

Description	Code	1+	10+
Arabic gilt numerals	2809	£0.80	£0.70

LOOKING FOR INSPIRATION?

See how we made a concrete clock:

 www.kitronik.co.uk/concrete



SHORT SPINDLE QUARTZ CLOCK MECHANISM

NEW!

A precision Quartz Clock Mechanism, complete with easy-to-mount fixing hardware and hour, minute and second hands. Runs for over a year with 1 AA battery. This shorter spindle clock movement is ideal for use with thinner clock face materials.

Supplied as single, in a box of 20, in a tray of 100, or in a box of 500.



The clock will typically run for over one year off a single AA size battery (available separately).



Size 55 x 55 x 15mm.
 Max panel thickness 3mm.
 Hand dimensions: Hour 62mm;
 Minute 90mm; Second 90mm
 (measured from centre of clock movement).



www.kitronik.co.uk/2810



^ The short spindle (left) in comparison with the regular spindle (right, product 2801).

Description	Code	1+
Single short spindle clock mechanism	2810	£1.53
Box of 20 short spindle clock mechanisms	2811	£21.00
Tray of 100 short spindle clock mechanisms	2812	£85.00
Box of 500 short spindle clock mechanisms	2813	£375.00

SHORT HANDS FOR QUARTZ CLOCK MECHANISM

NEW!

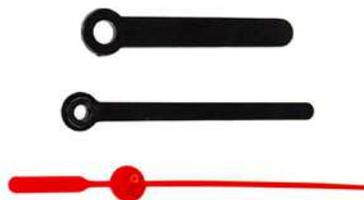
These Short Hands for Quartz Clock Movements expand your options when designing clock faces and are compatible with all of the Quartz Clock Movements we stock.



Hour 49.3mm; Minute 54.5mm; Second 57.3mm.



www.kitronik.co.uk/2814



Description	Code	1+	10+	100+
Short hands for Quartz Clock Movement	2814	£0.49	£0.39	£0.29

MAKE YOUR MINI-FIGURES MOVE WITH FIZZBIT



- 1 Create your 3D printed or paper robot.
- 2 Plug the Fizzbit module directly into a computer or USB power supply.
- 3 Your Fizzbot can now battle, race and dance around!

FIZZBIT MODULE



The Fizzbit is a way to bring movement and excitement to mini-figures of your own invention. It is a small module containing a vibration motor, super capacitor and USB socket, which can plug directly into a computer or USB power supply (no batteries required). You slot your Fizzbit into a mini-figure (made from paper or 3D printed), turning it into a Fizzbot. Fizzbots can battle, race and dance around.

For a full set of templates for creating Fizzbots, see:

 www.thecraftyrobot.net

The resources offer a great starting point and allow you to make Fizzbots using a 3D printer, a paper cutting machine or, simply, cut out by hand.



List of resources:

- Sumo wrestler: 123D file, Design Spark Mechanical File
- Fizzbot base (Sphere with mounting details): 123D file, Design Spark Mechanical File.
- Paper Fizzbot base (used to make tiger and sequin figure): DXF file, PDF.
- Dragon and Unicorn: DXF files.
- Cowboy and horse: PDF.



The Fizzbit module 

Description	Code	1+	10+	100+
Fizzbit module	5201	£4.50	£3.40	£3.20

SOLAR POWERED BUGGY



Thinking of ways to introduce solar energy to your students? With this Solar Powered Buggy, learning how to harness the sun's energy to produce power is fun and hands-on.

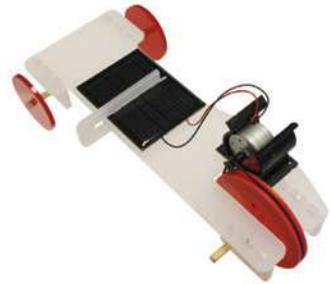
The buggy is simple to construct and all of the required parts are included. The scope of the project can be extended by getting your students to redesign aspects of the buggy and evaluate the impact that this has on its performance.

i This kit requires assembly, including soldering.

e www.kitronik.co.uk/2153

Code	1+	5+	50+	200+*	300+*
2153	£8.50	£8.00	£7.60	£7.22	£6.84

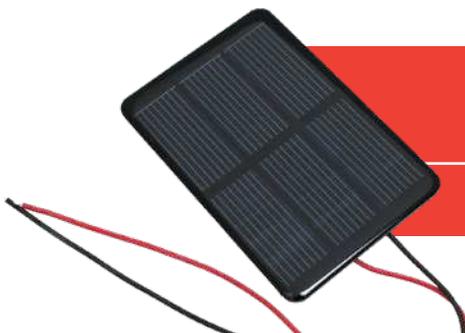
* Price shown includes bulk buy discount



SOLAR EDUCATIONAL KIT

The solar kit is a perfect introduction to solar energy. The kit includes a 400mA solar module, low inertia motor, connecting lead, impeller and discs plus a booklet.

Description	Code	1+
Solar educational kit	3601	£7.10



**LOOKING FOR
SOLAR CELLS?**

Check out **page 149**.

MICRO USB TO 5V BREAKOUT

This compact Micro USB Breakout Board offers an easy way of connecting circuits to the 5V power lines that a USB connection supplies. The output (5V and Gnd) connections are two large solderable pads on the PCB. This board is ideal for replacing batteries in a variety of circuits such as our Mono Amp kit. It is compatible with Micro USB chargers supplied with most mobile phones and tablets.



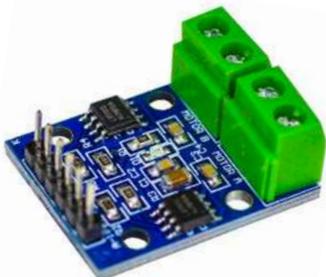
www.kitronik.co.uk/5109

Code	1+	10+
5109	£0.95	£0.75

TWO CHANNEL MOTOR DRIVER BOARD

NEW!

A simple board for driving two brushed DC motors or a single stepper motor. Power input is 2.5V-12V DC and the H-bridge input controls are on B-1A, B-1B and A-1A, A-1B.



www.kitronik.co.uk/46134

Code	1+
46134	£0.85

ULTRASONIC RANGE FINDER HC-SR04 5V

Use sonar to add distance sensing to your robotics, electronics, or Arduino project. This module has been specially selected to work on the voltage range typically found with the Arduino range of products. You can easily add this to your project and even use with the micro:bit if you use a separate 5V power supply.



www.kitronik.co.uk/46130

Code	1+
46130	£2.00

PIR MOTION SENSOR

This is a simple-to-use motion sensor. Power it up and wait 1-2 seconds for the sensor to get a snapshot of the still room. If anything moves after that period, the 'alarm' pin will go low. Voltage, 5V to 12V. This kit is pre-assembled.

i Open collector output requires pull up resistor.



www.kitronik.co.uk/4633

Code	1+
4633	£9.30

RESISTIVE TOUCH KEYPAD

NEW!

This is designed to make the resistive touch capabilities of the micro:bit much easier to access and use. It breaks out pins 0, 1 and 2 from the micro:bit to circular pads. They are ideally sized for fingertips to make a connection across the particular pin and GND. Connect to a micro:bit by using jumper cables from the installed pin header.

www.kitronik.co.uk/5637



Description	Code	1+	10+	50+
Resistive touch keypad	5637	£3.45	£2.95	£2.80

LINE TRACKING MOUSE KIT

 KS
4

A complete kit of electronic and mechanical parts to build a line following robot. Three photo sensors are used as the robots 'eyes' to allow it to follow a black line, drawn on paper or taped to the floor. Full assembly instructions included.

Requires 4x AA batteries, available separately.

www.kitronik.co.uk/2190



Description	Code	1+	5+
Line Tracking Mouse kit	2190	£18.65	£18.35

SOUND REVERSING CAR KIT

 KS
4

This car moves forward until it senses noise from a clap or physical contact with an object, when it reverses whilst turning. Full assembly instructions included.

Requires 2x AA batteries, available separately.

www.kitronik.co.uk/2192



Description	Code	1+	5+
Sound Reversing Car kit	2192	£10.45	£10.15

GRATNELL'S STORAGE TRAYS

Gratnell's are international award-winning trays, BSI tested and passed for heavy educational use, making them the ideal storage solution for the classroom. The trays will fit standard school furniture.

We carry several different depths of tray, as well as a lid that will fit all sizes.



 www.kitronik.co.uk/trays

Description	Code	1+
Gratnell's Storage Tray F1 Shallow Tray - Kitronik Green	2056	£2.95
Gratnell's Storage Tray F2 Deep Tray - Kitronik Green	2057	£4.15
Gratnell's Storage Tray F25 Extra Deep Tray - Kitronik Green	2058	£5.45
Gratnell's Storage Tray F3 Jumbo Tray - Kitronik Green	2059	£6.70
Gratnell's Clip-on Lid for F Range - Translucent	2060	£2.10

WE STOCK A LARGE RANGE OF PLYWOOD SHEETS

Plywood is ideal for Model Making, Joinery and Carpentry applications.

See **page 221** for more details.

ISOSKETCH DRAWING TOOL

3D drawing skills can be a major barrier to learning in creative subjects like Product Design, Resistant Materials and Graphic Products. The whole point of D&T should be that your imagination is the limit - not your talent.

The **IsoSketch 3D Drawing Tool** is a precision design stencil, designed to help create perfect isometric drawings in seconds, or intricate masterpieces with a bit more patience. The IsoSketch is ideally suited for use in schools, thanks to its compact design and the ten individual design tools it incorporates.

Made from Shatterproof Styralux, the IsoSketch is a rugged, durable tool which can withstand a significant degree of pressure without damage.

Available as an individual item or in a class pack of 30, the IsoSketch is especially suited to beginners looking for a simple solution to drawing great quality diagrams and plans.



- ✓ See the IsoSketch in use at www.thedrawingtoolcompany.com/videos



www.kitronik.co.uk/26105

Description	Code	1+
IsoSketch 3D Drawing Tool Single Pack	26105-01	£4.08
IsoSketch 3D Drawing Tool Class Pack – pack of 30	26105-30	£60.00

05 E-TEXTILES

SECTION CONTENTS

An introduction to Electro-Fashion	121
Conductive thread & fabric	122 - 123
Electro-Fashion kits	124 - 127
Electro-Fashion holders, switches & LEDs	128 - 131
Igloo	132 - 133



ELECTRO FASHION®

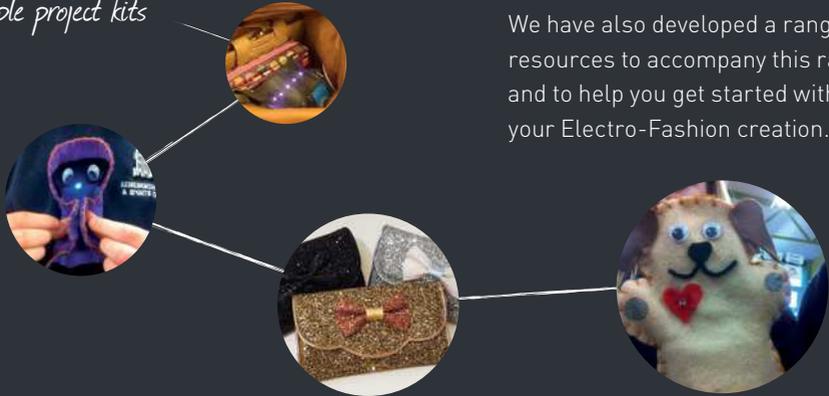
THE **EASY** WAY TO ADD ELECTRONICS
TO YOUR TEXTILES PROJECT

For more details on our e-textiles products, visit:



www.kitronik.co.uk/electrofashion

Example project kits



The Electro-Fashion range includes kits and also individual parts (for your own unique creations). The kit range includes simple sewable LED kits and a programmable 'Igloo' board.

Our large selection of individual Electro-Fashion components includes sewable push, tilt, slide switches. There is also a selection of battery holders (to provide power) and easy to use sewable LEDs.

We have also developed a range of resources to accompany this range and to help you get started with your Electro-Fashion creation.





CONDUCTIVE THREAD 45M BOBBIN

Conductive thread is perfect for hand sewing and can be used on the bottom bobbin of a sewing machine (this will require the thread to be wound on to the smaller bottom bobbin first). Reels of conductive thread are 50 yards / 45m. Conductive thread can be used like conventional sewing thread, however it electrically conducts allowing electronics to be integrated into textiles.

Description	Code	1+	4+
Conductive thread - 45m bobbin	2722	£7.95	£6.70



CONDUCTIVE THREAD 250M BOBBIN

Working on a big project and need a lot of thread? Then this longer 250m bobbin of conductive thread will be just what you need. It is exactly the same thread that goes on the 45m bobbin, just more of it.

Description	Code	1+
Conductive thread - 250m	2744	£35.00



CONDUCTIVE THREAD 2M / 6M T-SHIRT

We now offer 2m or 6m of conductive thread (approximately), which is bound around a funky pink Electro-Fashion t-shirt emblem that can be used as a key ring!

Description	Code	1+
2m (approx) Conductive thread	2724	£1.66
6m (approx) Conductive thread	2727	£2.50



CONDUCTIVE RIBBON

A great addition to any wearable electronic project, this easy to use conductive ribbon has three separate conductive strands woven into it, allowing you to transmit power, ground and signal. You can solder it provided you don't have the soldering iron too hot, and it is quite flexible and durable. It has very little (negligible) resistance and is made of 68% stranded tinsel wire and 32% polyester.

 Approx. size 0.9m x 5mm.

Description	Code	1+
Conductive ribbon	2739	£7.25

CONDUCTIVE FABRIC



Conductive fabric can be used to make a soft switch. Only a small amount is required per switch, so this sheet goes a long way. This is a conductive knit fabric for use in e-textiles, similar to a nylon ripstop material. It is highly conductive with a low surface resistivity.

Description	Code	1+
Conductive fabric - ripstop - 305 x 330mm	2716	£9.00
Conductive fabric - stretch - 305 x 330mm	2717	£20.00



CONDUCTIVE HOOK & LOOP (VELCRO) STRIP

This is a 10cm long strip of conductive hook & loop (Velcro). This conductive strip is perfect for E-Textile projects where you need to make a complete circuit by simply forming a connection between the hook and loop pieces. The strip is 2.5cm wide by 10cm long. The surface resistance for both the hook and the loop is 1Ω per centimetre.

Description	Code	1+
Conductive hook & loop strip - 2.5 cm x 10 cm	2740	£5.00



MAGNETIC BUTTONS – PACK OF 5

These magnetic buttons / fasteners make great switches when used in conjunction with our conductive thread. You can simply sew conductive thread to each half of the fastener using the two mounting holes on each contact to make a simple on / off switch. Pack of 5.

Description	Code	1+
Magnetic Buttons - pack of 5	2755	£4.00



^ Project Example

SEWABLE LED KITS

Kits are packed ready for student use and include a coin cell holder, a coin cell, 2m of conductive thread and either two flashing LEDs or one colour changing LED. They allow lighting effects to be added to textiles designs without soldering.

Description	Code	1+	10+
Flashing blue sewable LED kit	2702	£2.85	£2.35
Flashing green sewable LED kit	2703	£2.85	£2.35
Flashing red sewable LED kit	2704	£2.85	£2.35
Flashing yellow sewable LED kit	2705	£2.85	£2.35
Colour changing sewable LED kit	2706	£2.85	£2.35

ELECTRO-FASHION - 60 STUDENT BULK PACKS

These bulk packs offer great value for teaching larger groups of students.

See  www.kitronik.co.uk/2707 and [/2764](http://www.kitronik.co.uk/2764) for full pack contents.

Description	Code	1+
60 Student Bulk Pack – Regular LEDs	2707	£89.95
60 Student Bulk Pack – Flat LEDs	2764	NEW! £119.95



^ Project Example
(requires extra LEDs)

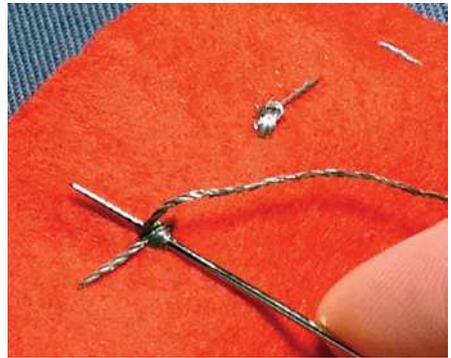
ELECTRO-FASHION KITS WITH FLAT LEDs

These kits are ready-packed with all of the parts needed for students to make a simple E-Textiles circuit. The kit includes two flat LEDs that are marked up with + and – markings, making them smaller and easier to use than LEDs with leads. As well as the two flat LEDs, the kit also includes a 2m t-shirt of conductive thread, a sewable coin cell holder and coin cell.

Description	Code	1+	10+
Sewable LED kit with blue flat LEDs	2735	£3.50	£2.80
Sewable LED kit with green flat LEDs	2736	£3.50	£2.80
Sewable LED kit with red flat LEDs	2737	£3.50	£2.80
Sewable LED kit with white flat LEDs	2738	£3.50	£2.80

BEGINNER GUIDES FOR E-TEXTILES

To make it easier to find the e-textiles guidance you need we have restructured the resources on the Kitronik website. As well as splitting the instructions out into difficulty levels, a new e-textiles basics section has been created. The basics page covers everything from what e-textiles is, the parts in the Electro-Fashion range, choosing a needle, basic circuits, fault finding as well as answers to all your frequently asked questions. All in all there are 14 guides to cover the basics and are perfect to get teachers and students started with e-textiles.



www.kitronik.co.uk/e-textiles-basics

TUTORIALS

In addition to supplying the fundamental parts of any E-Textile project, we also offer a selection of online E-Textiles tutorials and resources with step-by-step guidance and cutting pattern templates.

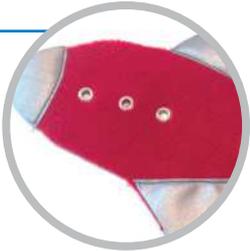
EXAMPLE TUTORIAL: HOW TO MAKE A ROCKET TORCH KEY RING

- 1**

MATERIALS & COMPONENTS NEEDED FOR THIS PROJECT


- 2**

PREPARE THE ROCKET BODY


- 3**

CREATE THE E-TEXTILE CIRCUIT


- 4**

STITCH THE ROCKET LAYERS TOGETHER, LIGHTLY STUFF, & PUSH TO ACTIVATE!



For more tutorials, visit www.kitronik.co.uk/etextilestutorials

PROJECT EXAMPLES - ELECTRO-FASHION SEWABLE LEDs



- ^ Examples of conductive fabric used on the hands of puppets.
 When these are touched together, the circuit is completed and the LED lights up.



- ^ Annabelle Greaves of Hello Violaceous specialises in handcrafted bags, purses and accessories. Some of her stunning designs feature E-Textile electronics and show just how effective E-Textiles can be.

Read more about Annabelle at



www.kitronik.co.uk/etextiles-handbag

ELECTRO-FASHION FLASHER CONTROLLER, LEDs & THREAD



This unit offers a simple way of adding 'flashing' white LEDs to a textiles project. The unit is programmed with a number of flashing patterns that are selected by a push button on the main PCB. Pressing this button cycles through the following patterns: all LEDs constantly on, slow flash (all on, all off), fast flash (each in turn), and turned off. The device features auto off, which turns the unit off after 30 minutes to preserve battery life. Depending upon flash pattern the battery lasts for approximately two days of constant use.

This kit is supplied 'pre-built' so requires no soldering. Each kit comprises three small PCBs. The largest of the three PCBs holds an LED plus the control electronics, battery and a push button. On both of the remaining PCBs there is an LED, which are connected to the main board with conductive thread.

-  Includes approximately 2m of conductive thread.
-  Dimensions: L34 x W20 x H9mm.
-  Includes a CR2032 battery.

Description	Code	1+	10+
Flasher controller and LEDs	2719	£4.80	£4.20

ELECTRO-FASHION - DISCOVERY PACK



This pack is a great way of getting started with E-Textiles. The pack contains a selection of the popular products from our 'Electro-Fashion' range.

- 1 x White sewable PCB LED - pack of 10.
- 1 x Sewable coin cell holder with built in power switch.
- 1 x Sewable push switch.
- 1 x Sewable slide switch.
- 1 x Sewable tilt switch.
- 1 x Electro-Fashion sewable coin cell holder, 2m thread and colour changing LED.
- 3 x Electro-Fashion sewable coin cell holder.
- 1 x Small conductive thread bobbin (6m).
- 1 x Blue sewable PCB LED - pack of 10.
- 1 x Coin cell, CR2032, strip of 5.

Description	Code	1+
Electro-Fashion - Discovery Pack	2715	£21.30

SEWABLE COIN CELL HOLDER

The specially designed coin cell holder has large connection points for the conductive thread and are marked to show the battery polarity. It is available on its own, to incorporate into your own designs.



Accepts CR2032 battery.



Dimensions: L34 x W20 x H4.5mm.

Code	1+	10+
2701	£1.10	£0.85

MINIATURE COIN CELL HOLDER

This specially designed coin cell holder has large connection points for the conductive thread. These are clearly marked to show the battery polarity.



Accepts CR1220 battery.



Dimensions: L22 x W12.5 x H4mm.

Code	1+	10+
2718	£1.10	£0.85

LATCHING SWITCH COIN CELL HOLDER

This coin cell holder has large connection points for the conductive thread, clearly marked to show the battery polarity. The unit incorporates a latching push button switch meaning you press once to turn the power on, and again to turn the power off.



Accepts CR2032 battery.



Dimensions: L44 x W20 x H4.5mm.

Code	1+	10+
2752	£2.15	£1.95

SWITCHED COIN CELL HOLDER

This specially designed coin cell holder has large connection points for the conductive thread. These are clearly marked to show the battery polarity. The unit also has a small power switch so that you can turn the power on and off.



Accepts CR2032 battery.



Dimensions: L44 x W20 x H4.5mm.

Code	1+	10+
2711	£1.85	£1.55

ELECTRO-FASHION LIGHT SENSOR

This board allows LEDs to be turned on automatically when it is dark. On one side of the board is the coin cell holder, which takes a CR2032 coin cell as well as a small on / off slide switch. On the other side of the board is the light sensor. The design means that it is possible to cut a small hole in the front of the product for the light sensor to detect the light level, whilst also being able to get to the back of the board to change the battery and turn the board off. When turned off any connected LEDs will be off. When turned on the connected LEDs will be off in daylight but come on in the dark.



Description	Code	1+	10+
Electro-Fashion - Light sensor	2721	£3.50	£2.40



LITHIUM 3V COIN CELLS

Description	Code	1+	10+
3V CR2032 - 200mA/h - 5 pack	2262	£1.25	£0.95
3V CR1220 - 40mA/h - 5 pack	2269	£1.25	£1.05

NEEDLE SET

This set of sewing needles is a must-have when stitching together your next e-textile project. Each envelope contains three 48mm, 1.23mm thick needles and two smaller 39mm, 0.67mm thick needles. The eye of each size needle is large enough to easily thread with our conductive thread.



Code	1+
2741	£1.35

SEWABLE BUZZER

This sewable buzzer allows you to add an alarm or alert sound to your textiles project. The buzzer has a built in drive circuit, so you just need to connect power (3V) to the buzzer for it to sound. Not suitable for use with Igloo board.



Dimensions: L24.5 x W10.5 x H6.3mm.

Code	1+	10+
2745	£2.50	£2.00

DID YOU KNOW THAT WE STOCK

THE BBC micro:bit?

We have everything you could need – from the micro:bit itself, to various accessories, to our very own Kitronik Inventor's Kit – ideal for beginners.

See **page 59** for details.



SEWABLE PUSH SWITCH

This push button switch will allow LEDs to light whilst the switch is pressed.

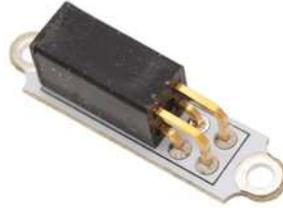


 Dimensions: L18 x W8.5 x H6mm.

Code	1+	10+
2708	£0.95	£0.73

SEWABLE TILT SWITCH

When horizontal this switch is off. When tilted 10° from horizontal the tilt switch is on.



 Dimensions: L26 x W6.5 x H7mm.

Code	1+	10+
2710	£1.50	£1.15

LATCHING SWITCH

This switch latches meaning you press once to turn the power on, and again to turn the power off. Simply connect the 'input' side to a power board and the 'output' side to the parts you want to turn on. Pressing the button toggles the power state on the output side.

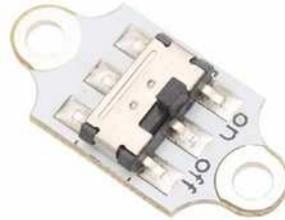


 Dimensions: L19.5 x W19.5 x H4mm.

Code	1+	10+
2753	£1.60	£1.20

SEWABLE SLIDE SWITCH

This two position miniature slide switch allows LEDs to be turned on or off in textiles projects.



 Dimensions: L18 x W8.5 x H4mm.

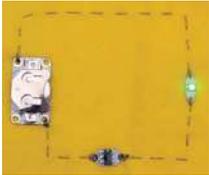
Code	1+	10+
2709	£0.95	£0.73



ELECTRO-FASHION MAGNETIC SWITCH & MAGNET

This magnetic switch can turn on LEDs when the magnet is placed near the switch.

Description	Code	1+	10+
Magnetic switch & magnet	2763	£3.00	£2.50
Replacement magnet	3431	£0.50	



Dimensions:
L15 x W6.5 x H3mm

SEWABLE PCB LEDs

These ultra slim, pre-mounted LEDs are illuminated continuously. They have connections to which the conductive thread can be connected. These are clearly marked with '+' and '-' to indicate which is the positive and which is the negative connection. The PCBs are double sided making the thread connection very reliable. They are supplied on a small panel and the LEDs can easily be removed by snapping them out.

Description	Colour	Code	1+	10+
LED board - 10 pack	White	2714	£4.50	£3.50
LED board - 10 pack	Red	2712	£4.50	£3.50
LED board - 10 pack	Green	2723	£4.50	£3.50
LED board - 10 pack	Blue	2713	£4.50	£3.50
LED board - 10 pack	Sakura (lilac)	2726	£5.00	£3.90
LED board - 10 pack	Orange	2765	£5.00	£3.90
LED board - 10 pack	Yellow	2766	£5.00	£3.90



Dimensions:
L18 x W7.5mm

THROUGH HOLE LED HOLDERS

These sewable LED holders make it easy to add a compatible 5mm through hole LED to an e-textiles project. The boards have two large sewable pads to which the conductive thread can be connected and these are clearly labelled with '+' and '-' symbols. Just slide the legs of the chosen LED through the holes in the middle of the board (making sure it matches the outline on the PCB) and solder into place. Supplied in a panel of 10. Requires soldering.

Description	Code	1+	10+
Through hole LED holders - 10 pack	2746	£3.25	£2.65

5MM FLASHING LED



These flashing LEDs can be used with the Electro-Fashion coin cell power boards. 5mm flashing LEDs in white, red, green, blue and yellow. The LEDs flash at around 2Hz when connected to a 5V supply.

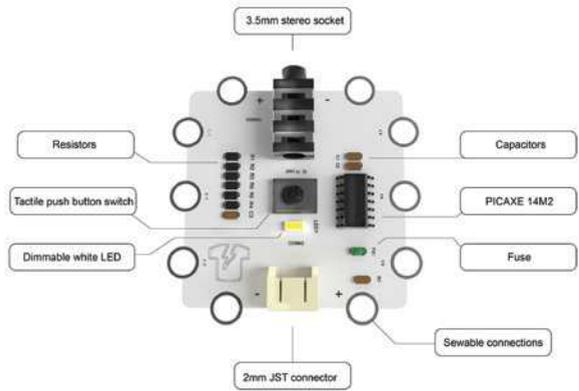
Colour	Code	1+	10+	100+	1000+
White	3592	£0.26	£0.16	£0.14	£0.13
Red	3538	£0.24	£0.14	£0.12	£0.10
Green	3539	£0.24	£0.14	£0.12	£0.10
Blue	3545	£0.24	£0.14	£0.13	£0.11
Yellow	3540	£0.24	£0.14	£0.12	£0.10

IGLOO, PICAXE WEARABLE MODULE

This PICAXE control board offers an easy introduction to the world of wearables. The board can be used to control inputs and outputs like switches, sensors, LEDs, buzzers and many more to add another dimension to your next wearable project!

It is packed full of features and, like all of our Electro-Fashion PCBs, is double-sided and has large connection points for conductive thread, making the connection very reliable.

On-board there is a PICAXE 14M2 programmable IC, a dimmable white LED, a momentary push switch, a 3.5mm stereo socket for ease of programming, and a JST connector for attaching a battery pack. There are also 6 sewable I/O pins, making this a really versatile control board. Pins C0, C1, B5, B4, B3, B2 (the on-board LED) can be used to fade LEDs (using Pulse-width modulation) and Pins C0, C4, B5, B4, B3 can be used to read analogue inputs.



It can be powered either by the JST connector, or the clearly marked '+' and '-' connections via conductive thread, from a power source between 3V and 5.5V.

The board can be programmed via the official PICAXE software (in Blockly, Basic or flowcharts) to make programming accessible even to complete beginners. Just download the free software from www.kitronik.co.uk/picaxe, and connect the board to a PC via a PICAXE USB download cable.

 Dimensions: L44 x W20 x H7mm.

 www.kitronik.co.uk/igloo

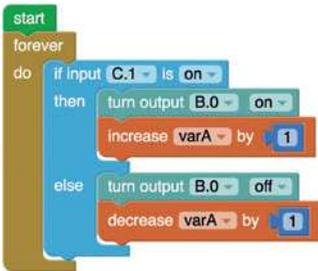
- Key features:**
- Built in PICAXE 14M2 programmable IC.
 - On-board dimmable white LED.
 - On-board switch.
 - 6 sewable I/O pins.
 - JST connector & sewable '+' and '-' pads
 - 3.5mm stereo jack for programming.
 - Low profile and compact.

Description	Code	1+	10+
Igloo, PICAXE Wearable Module	2751	£6.35	£4.95

IGLOO RESOURCES

Are you still unsure about what Igloo can do for you or about E-Textiles in general? Then why not take a look at our E-Textiles resource section. This contains a wide selection of step by step guides and videos to get you started.

For the Igloo module we have created a number of short videos that will guide you through the examples covered in the Igloo starter guide. In these you can watch and learn how parts are connected to the board and the software is created using the simple 'drag and drop' Blockly software. You will be amazed how simple it is.

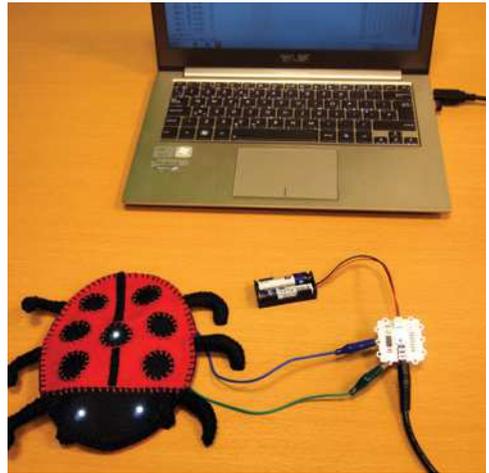


Program in simple drag and drop blocks

To view our Igloo and other E-Textiles resources please visit:



www.kitronik.co.uk/etextilestutorials



Clip leads can be used to test designs

SEWABLE LIGHT LEVEL DETECTOR

Designed for use with our Igloo module, this specially designed light level detector allows you to activate other equipment based on day or night conditions. As the light level increases, so does the output voltage supplied by the Out pin. This light level can then be read by the Igloo module. Connecting it is easy using the three large, clearly marked, double-sided connection points.

Dimensions: L20.5 x W12 x H2.6mm.



Description	Code	1+	10+
Sewable light level detector	2754	£1.36	£0.95

06 ROBOTICS



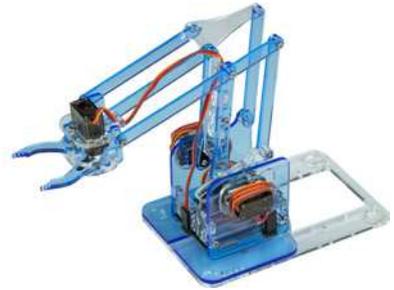
SECTION CONTENTS

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MeArm ROBOT CLASSIC MAKER KIT

The MeArm Classic Maker kit contains the structural parts, servo motors, and screws with which to build the robot arm. It is down to the user to provide a control board. We have code available for many platforms.

 www.kitronik.co.uk/4502



Description	Code	1+
MeArm robot classic maker kit	4502	£33.33

MeArm ROBOT RASPBERRY PI KIT

This kit is perfect for the Raspberry Pi. It contains all of the hardware needed, with the **exception of the Raspberry Pi**, to build and control a MeArm Robot Arm. Available in Blue and Orange.

 www.kitronik.co.uk/4503

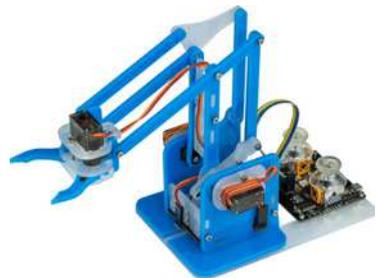


Description	Code	1+
MeArm robot Raspberry Pi kit – Blue	4503	£58.33
MeArm robot Raspberry Pi kit – Orange	4504	£58.33

MeArm ROBOT ARDUINO COMPATIBLE KIT

This kit is perfect for learning about Arduino. It contains all of the hardware needed, including a WiFi enabled Arduino compatible control board to build and control a MeArm Robot Arm. Available in Blue and Orange.

 www.kitronik.co.uk/4507



Description	Code	1+
MeArm robot Arduino compatible kit – Blue	4507	£58.33
MeArm robot Arduino compatible kit – Orange	4508	£58.33

FS90R 360 DEGREE CONTINUOUS ROTATION SERVO

A 360 degree continuous rotation servo. Instead of going to a specified angle, this servo can rotate fully in a forward and reverse direction.



www.kitronik.co.uk/2589

Code	1+
2589	£3.85

MINI 180 DEGREE SERVO

This mini 180 Degree 5V servo with accessories is great value, and is ideal for micro-controller systems like the BBC micro:bit, Arduino, Raspberry Pi and PICAXE.



Length: 22mm.
Width: 12mm.
Height: 31mm.

Code	1+	10+
2565	£2.55	£2.35

SPOKE WHEELS FOR SERVO MOTOR

If you have a robotics project or buggy featuring FS90R style micro continuous rotation servos, these 5 spoke injection moulded ABS wheels are the perfect wheel for the job! They fit directly onto the servo and can be screwed to the servo with the fixings that come with the servo.

www.kitronik.co.uk/2593-SV



Description	Code	1+	10+	50+
Pair of 5 spoke wheels for Servo Motor - White	2593-SV	£2.05	£1.85	£1.65

STANDARD S3003 STYLE SERVO

This servo is designed for use in remote controlled cars & boats, but can be driven by a PICAXE chip. Supplied with a range of arms and wheels.

Typical Voltage: 4.8V.
Operating Current: 100mA.



Length: 40mm;
Width: 20mm; Height: 37.3mm.

Code	1+	10+
2542	£8.24	£6.50

LARGE 180 DEGREE SERVO

An excellent value 180 degree rotation servo that can be used as a direct replacement for the Towerpro MG996R servo. It has metal gearing and double bearing for accuracy and wear resistance.

Operating Voltage: 4.8V to 7.2V.



Length: 40mm; Width: 19mm; Height: 43mm.

Code	1+
2575	£5.00

CLIPPABLE SERVO

NEW!

This clippable servo has had the standard pin header replaced with super useful crocodile clips. 180-degree rotation and operates between 4.8V and 6V.


www.kitronik.co.uk/25105

Code	1+	10+	100+
25105	£4.95	£4.45	£3.95

SERVO TO CROCODILE CLIP ADAPTER CABLE

NEW!

Connect a servo using clip wires with this servo to crocodile clip adapter cable. It has 100mm colour coded cables terminating in a male servo connector.


www.kitronik.co.uk/4178

Code	1+	10+
4178	£1.05	£0.95

MINI 180 DEGREE METAL GEAR SERVO MG90S

The MG90S Servo is small and lightweight but boasts a high output power for its size. This is largely due to its metal gear and bearing. This makes it much more durable than other types of small servo that feature plastic gears and bearings. It operates between 4.8V to 6V and only weights 13.4g.


www.kitronik.co.uk/2592

Description	Code	1+
Mini 180 Degree Metal Gear Servo MG90S	2592	£3.33

SOLENOID - 5V

This solenoid operates at 5V making it ideal for embedded projects. It has a throw of about 6mm and two M2 mounting holes on the body.



Dimensions: 20x12x11mm.

Code	1+
2540	£5.35

STEPPER MOTOR WITH CABLE

This is a simple, but very powerful stepper motor with a 4-wire cable attached. Step size: 1.8°.


 Shaft diameter: 5mm.
 Dimensions: 41x41x33mm.

Code	1+
2536	£15.00

RIGHT ANGLE GEARED TT HOBBY MOTOR

This is a 90RPM geared hobby motor. It runs off a voltage of between 3V & 6V & can be used with our matching tyre, allowing you to build your own buggy.

i **Operating voltage:** 3v – 6v [4.5v nominal]. **No load current:** 200mA (approx).
Speed: 90RPM (approx). **Stall current:** 1.25A (approx).

 www.kitronik.co.uk/2547



Description	Code	1+	10+	100+
Right Angled Geared TT Hobby Motor	2547	£1.90	£1.85	£1.60

SOLDERLESS TT MOTOR ADAPTER BOARD

NEW!

This easy to fit (no soldering) board allows clip wires to be easily connected to a TT motor (sold separately).

 www.kitronik.co.uk/2594



Description	Code	1+	10+
Solderless TT Motor Adapter Board	2594	£0.85	£0.65

SPOKE WHEELS & RIGHT ANGLED TT MOTORS

If you have a robotics project or buggy featuring geared hobby motors, these 5 spoke injection moulded ABS wheels are the perfect wheel for the job! They fit directly onto the motor and can be screwed to the motor.

The ABS used is very lightweight and has excellent mechanical qualities. As such, the wheels are extremely durable and very difficult to break. As they are made from ABS, the wheels can be fully recycled.

The wheels are supplied with rubber o-rings that when pushed onto the wheel act as tyres. When fitted, the o-rings will not come off accidentally. A concerted effort is required to remove them. **Supplied as a pair.**

 www.kitronik.co.uk/2593-TT

 www.kitronik.co.uk/25100



Description	Code	1+	10+	50+	100+
Pair of 5 spoke wheels for TT motor - yellow	2593-TT	£2.05	£1.85	£1.65	
Pair of right angle geared TT motors with pair of yellow wheels	25100	£5.75	£5.25		£4.75



LOW INERTIA SOLAR MOTOR - 1760 RPM

Low inertia motor ideal for low power applications such as solar. Voltage range 0.7 to 5.0V [2V nominal].

Length: 12.8mm. Diameter: 24.4mm. Shaft: 6mm, diameter: 2mm.

Description	Code	1+	10+	50+
Low Inertia Solar Motor - 1760 RPM	2506	£1.40	£1.25	£1.20



LOW INERTIA SOLAR MOTOR - 1820 RPM

This is a low inertia solar DC mini motor. Operating voltage: 0.5V to 3V. Starting speed: 1000 RPM. Starting current: 30mA at 0.5V.

Length: 12.8mm. Diameter: 24.4mm. Shaft: 10.5mm, diameter: 2mm.

Description	Code	1+	10+	100+
Low Inertia Solar Motor - 1820 RPM	2546	£1.15	£1.05	£0.95



STEEL BALL CASTER

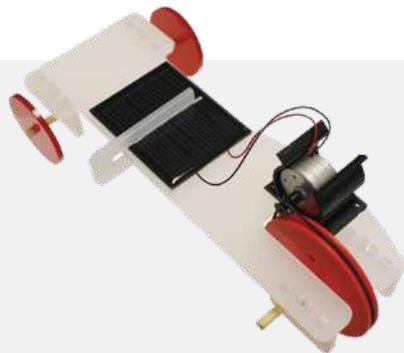
The Steel Ball Caster has a ball diameter of 16mm. This omni-directional metal ball caster is an ideal choice for the rear wheel of a robot design.

Diameter: 16mm; Length: 49mm; Width: 32mm; Height: 21mm.

Description	Code	1+	10+
Steel Ball Caster - 16mm	2566	£1.00	£0.95

WANT TO INTRODUCE YOUR STUDENTS TO **SOLAR ENERGY**? THEN CHECK OUT THE...

SOLAR POWERED BUGGY KIT!



This simple kit is easy to construct, and includes all the parts you'll need to make your very own Solar Powered Buggy. Harnessing the sun's energy has never been easier!

HEAD TO **PAGE 115**

MINI LOW TORQUE FLAT DC MOTOR

MM10 3V DC motor, operating voltage 1.5V to 4.5V. The two flat sides enable easy mounting onto a panel or PCB. Typical speed 12400 RPM, typical current 1.5A.



Length: 25mm.
Diameter: 20mm.
Shaft: 8.1mm, diameter: 2mm.



Code	1+	10+
2543	£0.45	£0.35

LOW TORQUE DC MOTOR

MM12 3V DC motor, operating voltage 1.5V to 3.0V. Mountable using x2 M3 bolts. Typical speed 11500 RPM, typical current 1.05A. Pack of 10.



Length: 25mm.
Diameter: 21mm.
Shaft: 8.1mm, diameter: 2mm.



Description	Code	1+
Low torque DC motor - 10 pack	2510	£3.05

MEDIUM TORQUE DC MOTOR

MM18 3V DC motor, operating voltage 1.5V to 4.5V. Mountable using x2 M3 bolts. Typical speed 5000 RPM, typical current 350 mA. Pack of 10.



Length: 27mm.
Diameter: 24mm.
Shaft: 8.6mm, diameter: 2mm.



Description	Code	1+
Med torque DC motor - 10 pack	2501	£5.05

HIGH TORQUE DC MOTOR

MM28 3V DC motor, operating voltage 1.5V to 6V. Mountable using x2 M3 bolts. Typical speed 7930 RPM, typical current 760 mA. Pack of 10.



Length: 30.5mm.
Diameter: 24mm.
Shaft: 10mm, diameter: 2mm.



Description	Code	1+
High torque DC motor - 10 pack	2507	£5.80

VERY HIGH TORQUE MOTOR

HS540 7V DC motor, operating voltage 6V to 12V. Mountable using x2 M3 bolts. Typical speed 19500 RPM, typical current 4.7A.



Length: 50mm.
Diameter: 35.8mm.
Shaft: 8.5mm, diameter: 3.2mm.



Code	1+
2557	£3.00

UNIVERSAL MOTOR CLIP

These clips are used to mount motors. The clip has an adapter to hold small flat sided motors and self adhesive backing. Pack of 10.



Description	Code	1+
Plastic motor clip - 10 pack	2505	£2.35

MINIATURE 3V VIBRATING MOTOR

Can be used as silent alert, within robotics & control stick feedback. Pre-wired with red & black leads 90mm

Operating range: 1.7-3.6VDC.

Rated current: 75mA.

Diameter: 6mm.
Length: 12mm.



Code	1+	10+	100+
2541	£1.55	£1.25	£1.15

MINIATURE 3V SHAFTLESS VIBRATING MOTOR

This shaftless 3V vibratory motor is perfect for non-audible indicators. Includes a 3M adhesive backing and reinforced connection wires.

Diameter: 10mm.
Length: 3.4mm.



Code	1+
4675	£2.49

GEARBOX

Fits motor 2507 (not included). The base includes holes for fixing. The assembly also includes a precision worm, gearwheel and output shaft.

Shaft: 100mm, diameter: 4mm.



Code	1+	10+	50+
2508	£2.45	£2.25	£2.10

PROPELLERS

These 2 and 3 blade propellers can be used with any motor with a 2mm shaft. 2 blade diameter, 150mm approx. 3 blade diameter, 115mm approx.



Description	Code	1+
150mm red two blade	2525	£0.40
115mm black three blade	2526	£0.65

90MM BLUE THREE BLADE PROPELLER

This large propeller can be used with any motor with a 2mm shaft. The diameter is approximately 90mm.



Code	1+	10+	100+
2545	£0.60	£0.43	£0.37

MINIATURE IMPELLER BLADE

This four blade impeller is 51mm in diameter and fits on to any motor with a 2mm shaft.



Code	1+	10+	100+
2544	£0.45	£0.31	£0.27



MINIATURE PULLEYS

A range of pulleys, all manufactured in the UK. The 8mm pulley has a 2mm push fit mounting and is suitable for use with MM10-MM28 and solar motors. All of the other pulleys have a 4mm push fit mounting which is suitable for use with wooden dowel (code 2533). All pulleys are 5mm wide. All supplied in packs of 10.

Description	Code	1+
2mm pulley, 8mm diameter - 10 pack	2512	£1.39
4mm pulley, 10mm diameter - 10 pack	2527	£2.00
4mm pulley, 20mm diameter - 10 pack	2528	£2.60
4mm pulley, 30mm diameter - 10 pack	2529	£4.40
4mm pulley, 40mm diameter - 10 pack	2530	£5.35
4mm pulley, 60mm diameter - 10 pack	2531	£6.40

RUBBER TYRES



These tyres fit on to our 40mm and 60mm diameter pulleys, turning them into wheels. Pack of 5.

Description	Code	1+
Tyre 40mm - 5 pack	2534	£1.05
Tyre 60mm - 5 pack	2535	£1.35

4MM WOODEN DOWEL

4mm wooden dowel, 600mm in length.



Description	Code	1+
4mm dowel - 10 pack	2533-10	£0.90
4mm dowel - 100 pack	2533	£6.20

MDF WHEELS



40mm and 50mm diameter MDF laser cut wheels with a 4mm mounting hole. Pack of 100.

Description	Code	1+
MDF Wheel 40mm - 100 pack	2561	£6.95
MDF Wheel 50mm - 100 pack	2562	£8.50

AXLE MOUNTING BRACKET

Axle bracket which is perfect for using with 4mm wooden dowel. Max diameter: 5mm. Pack of 100.



Description	Code	1+
Axle mounting bracket - 100 pack	2532	£8.50

KITRONIK KLAW MK2 ROBOTIC GRIPPER KIT

The Kitronik 'Klaw' gripper is a great addition to any robotics project. It is controlled by a low voltage servo which is included. The servo is used to open and close the Klaw. At the rear of the unit are mounting points allowing it to be bolted to other items, such as buggies or robotic arms. Supply voltage: 3V to 6V. **Supplied as a set of parts that require simple assembly.**



i This new version is compatible with the :MOVE mini (see page 72).

e www.kitronik.co.uk/25104

Description	Code	1+	5+
Kitronik Klaw MK2 Robotic Gripper Kit	25104	£5.50	£5.00

LINEAR ACTUATOR KIT

NEW!

This linear actuator converts the circular movement of a 180 degree servo (supplied) into motion in a straight line, one way and then the other. It can be mounted to a project to provide either horizontal or vertical movement.



e www.kitronik.co.uk/2595

Description	Code	1+	5+
Linear Actuator Kit	2595	£5.00	£4.50

WATER PUMP 6V-12V WITH 1M SILICONE TUBE

This diaphragm pump is the perfect choice for any project that requires water to be moved from one place to another. The pump is supplied with 1m of Silicone hose that can be cut as required. The hose provides a good seal and will not leak.

Extra tubing is available in 5m lengths.

i The pump requires between 6 - 12V DC and between 0.5 - 0.7A.

e www.kitronik.co.uk/2567
or /2569



Description	Code	1+
Water Pump 6V-12V with 1m Silicone Tube	2567	£9.99
5m Silicone Tube	2569	£4.99

07

COMPONENTS

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BATTERY CAGES WITH LEADS

Battery cage with 150mm colour coded flying leads. Available in 1 x AA, 2 x AA and 3 x AA versions.

Description	Code	1+
1 x AA cage with leads - 25 pack	2231-25	£3.25
2 x AA cage with leads - 25 pack	2232-25	£4.40
3 x AA cage with leads - 10 pack	2221-10	£3.95



BATTERY HOLDERS WITH PCB MOUNT

PCB mount battery holders. Available in 1 x AA, 2 x AA and N Size versions.

Description	Code	1+
1 x AA holder with PCB mount - 10 pack	2263	£2.05
2 x AA holder with PCB mount - 25 pack	2251-25	£5.80
N Size holder with PCB mount - 25 pack	2253-25	£4.29



BATTERY HOLDERS WITH CLIP

Battery cage with PP3 clip connection. Available in 2 x AA, 3 x AA and 4 x AA versions.

Description	Code	1+
2 x AA cage with clip - 25 pack	2233-25	£5.20
3 x AA cage with clip - 25 pack	2234-25	£6.95
4 x AA cage with clip - 25 pack	2235-25	£5.80



BATTERY HOLDERS WITH SWITCH

Battery cage with lid and switch. Available in 2 x AA, 3 x AA and 4 x AA versions. Connection is via flying leads.

Description	Code	1+	10+	100+
2 x AA battery cage with leads & switch	2258	£0.60	£0.55	£0.50
3 x AA battery cage with leads & switch	2239	£0.63	£0.55	£0.49
4 x AA battery cage with leads & switch	2222	£0.80	£0.70	£0.65

PP3 CLIP LEADS



PP3 clip leads are available in heavy duty (top) and standard styles (bottom).

Description	Code	1+
Heavy duty PP3 clip leads - 25 pack	2238-25	£3.50
Standard PP3 clip leads - 25 pack	2257-25	£2.25

COIN CELL HOLDER, PCB MOUNT



 Takes a CR2032 battery.

Description	Code	1+
Coin cell holder - 10 pack	2252-10	£3.19

LITHIUM COIN CELLS



Description	Code	1+	10+
3V CR2032 GP (branded) coin cell, 200mA/h - 5 pack	2250	£2.35	£2.05
3V CR2032 Economy coin cell, 200mA/h - 5 pack	2262	£1.25	£0.95
3V CR2016 Economy coin cell, 75mA/h - 5 pack	2264	£1.25	£1.05
3V CR1220 coin cell, 40mA/h - 5 pack	2269	£1.25	£1.05

BATTERY CAGES WITH JST CONNECTOR



Battery cage with JST connector, supplied with 145mm colour coded leads. Available in 2 x AAA and 3 x AAA versions.

Description	Code	1+	10+	100+
2 x AAA battery cage with JST connector	2271	£0.90	£0.77	£0.67
3 x AAA battery cage with JST connector	2273	£0.95	£0.82	£0.72

BATTERY BOX WITH SWITCH & JST CONNECTOR



Battery box featuring a cover, an on/off switch and JST connector. Available in 2 x AAA and 3 x AAA versions.

Description	Code	1+	10+	100+
2 x AAA battery box with switch & JST	2225	£0.95	£0.85	£0.75
3 x AAA battery box with switch & JST	2224	£1.30	£1.20	£0.95



BATTERY HOLDER WITH SWITCH & LED HOLDER

This switched battery holder comes complete with a terminal connector on the end of the wires. It is perfect for connecting LEDs without the need for soldering.

Description	Code	1+	10+	100+
2 x AA battery cage with leads, switch & connector	2268	£0.74	£0.64	£0.59
3 x AA battery box with switch & connector	2267	£0.80	£0.70	£0.65



ZINC CHLORIDE BATTERIES

Description	Code	1+	5+
PP3 battery - 10 pack	2211-10	£5.00	£4.50
AAA battery - 40 pack	2246-40	£7.05	
AA battery - 40 pack	2201-40	£7.15	£5.95



PRO-ELEC ALKALINE BATTERIES

Description	Code	1+	5+
Pro-Elec alkaline AA battery - 40 pack	2207-40	£8.95	£8.25
Pro-Elec alkaline AAA battery - 40 pack	2214-40	£8.65	£7.95



ALKALINE BATTERIES

Description	Code	1+	5+
GP alkaline AA size battery - 40 pack	2254-40	£12.35	£12.15
GP alkaline PP3 size battery - 10 pack	2255-10	£14.65	£14.10



N SIZE

Description	Code	1+	10+
N type 12V battery	2245	£0.45	£0.40



RECHARGEABLE BATTERIES

Description	Code	1+	10+
Rechargeable AAA battery (900mA/h)	2230	£1.05	£0.85
AA Ni-MH Rechargeable Battery 1300mAh	2278	£1.15	£0.95



FOUR WAY BATTERY CHARGER AA OR AAA

NEW!

This 4 way battery charger is a compact plug-in charger that allows you to charge any standard AA or AAA Ni-Cd/Ni-MH rechargeable batteries. It can charge 2 or 4 batteries at a time.

Description	Code	1+	10+
Four Way Battery Charger AA or AAA	2228	£4.45	£3.95



POLYMER LITHIUM ION BATTERIES

These are very slim, extremely light-weight batteries based on the Polymer Lithium (LiPo) Ion chemistry. Battery output 3.7V (nominal).

- i** 4652: Capacity 1000mAh.
 2209: Capacity 400mAh.
 2227: Capacity 250mAh.

Description	Code	1+	10+	100+
Polymer Lithium Ion Battery (3.7V, 1Ah)	4652	£4.25	£3.85	£3.50
Polymer Lithium Ion Battery (3.7V, 400mAh)	2209	£3.50	£3.15	£2.85
Polymer Lithium Ion Battery (3.7V, 250mAh)	2227	£3.40	£3.05	£2.75



SparkFun 5V/1A LIPO CHARGER/BOOSTER

This SparkFun 5V/1A LiPo Charger/Booster generates a 5V 1A supply from a 3.7V Lithium Polymer battery. The board also charges the LiPo battery (connected using a JST connector). Input power should be from a 5V micro USB PSU and the output is two solder pads.

Description	Code	1+
SparkFun 5V/1A LiPo Charger/Booster	46135	£15.30



BASIC - LIPO MICRO-USB CHARGER

A stripped down basic charger designed to charge 3.7V LiPo cells at 500mA per hour. Designed to work with single-cell Li-Ion and Li-Polymer batteries.

Description	Code	1+
Basic - LiPo Micro-USB Charger	2218	£9.00



50mA POLYCRYSTALLINE SOLAR CELL

This crystalline solar cell is finished with epoxy resin making it waterproof. Connection is via solder pads on the back of the cell.

Voltage: 3V. **Current:** 50mA (max).

Dimensions: L60 x W60 x H3mm

Description	Code	1+	10+	100+
3.0V 50mA polycrystalline solar cell	3603	£1.70	£1.50	£1.35

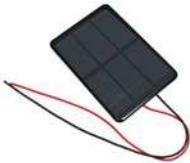


100mA POLYCRYSTALLINE SOLAR CELL

A 3V 100mA (max) crystalline solar cell, finished with epoxy resin making it waterproof.

Dimensions: L60 x W48 x H3mm

Description	Code	1+	10+	100+
3.0V 100mA polycrystalline solar cell	3604	£2.15	£2.05	£1.70



POLYCRYSTALLINE SOLAR CELLS

A high efficiency polycrystalline photovoltaic solar cell. Resin encapsulated (IP54), fitted with 200mm red and black connecting wires. Can be connected in series or parallel to obtain the desired voltage or output current.

Dimensions: 3606 – L60 x W90 x H3mm
 3607 – L120 x W62 x H3mm
 3608 – L110 x W56 x H3mm



Description	Code	1+
1.5V 400mA polycrystalline solar cell	3606	£3.55
2.0V 400mA polycrystalline solar cell	3607	£4.75
5.0V 130mA polycrystalline solar cell	3608	£4.55



5V 200mA POLYCRYSTALLINE SOLAR CELL

This is a high quality 5V 200mA (max) Polycrystalline solar cell measuring just 110mm x 110mm. They are the ideal choice for projects requiring a decent output current in a small form factor. The front face has a waterproofed PET laminated surface making it suitable for outdoor use. The rear face has solder pads for connecting to your circuit.

Dimensions: L110 x W110 x H3mm

Description	Code	1+	10+
5.0V 200mA polycrystalline Solar Cell	3605	£5.50	£4.85



USB (5V) WALL POWER SUPPLY

A 5V, 1A mains power supply. It has a USB socket on the top and is perfect for using with our USB power lead.

Description	Code	1+	10+
USB wall power supply	2261	£4.95	£4.75



5V 1A MICRO USB UK MAINS WALL POWER SUPPLY

This 5V 5W power supply is ideal for our 5V projects or a mobile phone. It has a 1.8M output cable and terminates in a Micro USB connector.

Description	Code	1+	10+
5V 1A Micro USB UK mains wall power supply	2208	£4.49	£4.25



12V 500mA UK MAINS WALL POWER SUPPLY

A high quality 500mA (6 watt) UK plug top switch mode power supply. The lead length is approximately 1.4m long with a 2.1mm DC jack on the end.

Description	Code	1+	10+
12V 500mA UK mains wall power supply	2260	£4.50	£4.20



12V 2A UK MAINS WALL POWER SUPPLY

A high quality 2A (24 watt) UK plug top switch mode power supply. The lead length is approximately 1.4m long with a 2.1mm DC jack on the end.

Description	Code	1+	10+
12V 2A UK mains wall power supply	2266	£6.75	£6.45



Unsure about the power supply you need?
Ask our technical support team

0845 8380781
support@kitronik.co.uk



STEREO PCB SOCKET

A 3.5mm stereo jack socket with switched contacts and a plastic body. **Pack of 25.**

Code	1+
4102	£2.30



PANEL MOUNT DC POWER SOCKET

Panel mounting DC power sockets with switched contacts, for 2.1mm DC plugs. Solder terminals. 3A 12VDC rated. **Pack of 10.**

Code	1+
4107	£2.10



PANEL MOUNT DC POWER SOCKET

A neat panel mounting, 2.1mm DC power socket with un-switched contacts. Single hole fixing (panel cut-out 8mm). 3A 12VDC rated.

Code	1+
4108	£0.65



PANEL MOUNT DC POWER SOCKET

This 2.1mm DC jack socket can be easily chassis mounted using a single 8mm hole. Will mount onto 3mm Perspex. Length including leads: 21mm.

Code	1+	100+
4119	£0.55	£0.48



9V PP3 BATTERY CLIP LEAD TO 2.1MM DC CONNECTOR

Versatile PP3 adaptor: plug a 9V battery into one end and connect the other end to anything with a 2.1mm, centre-positive barrel jack.

Code	1+	10+
4132	£0.95	£0.80



USB TO DC JACK

This cable adapts from a USB port to a 5.5x2.1mm barrel connector, center positive, allowing a USB port to provide development boards with 5V.

Code	1+
4120	£2.00



Free UK delivery on all orders over £40

(Excludes large sheet materials and deliveries to remote locations)



CLIP WIRES

Packs of 10 wires in a selection of 5 / 6 colours each with insulated crocodile clips on both ends. (Lead length 0.5m, max current 0.5 Amp)

Description	Code	1+	10+
Clip wires - 10 pack	2407	£1.80	£1.60



CLIP WIRES – SHORT LENGTHS

NEW!

Miniature Crocodile Leads, with crocodile clips on both ends. Sold as a pack of 10 with a selection of five colours. Max. current supported: 0.5A.

Description	Code	1+	10+
Clip wires with 50mm leads - 10 pack	2483	£1.70	£1.45
Clip wires with 100mm leads - 10 pack	2484	£1.75	£1.60
Clip wires with 150mm leads - 10 pack	2485	£1.90	£1.75



CROCODILE CLIP

A 50mm crocodile clip, with a 4mm socket. Screw or solder connection. **Pack of 25.**

Description	Code	1+
Crocodile clips - 25 pack	2422	£1.75



ALLIGATOR CLIP WITH FEMALE HEADER

This is a 4 pack of wires that are pre-terminated with an alligator (crocodile) clip on one end and a female header connection on the other. Can be used with a micro:bit.

Description	Code	1+	10+	100+
Alligator clips with female header - 4 pack	2447	£2.95	£2.45	£1.95



USB CABLE A TO B

Standard issue USB 2.0 cables. This is the most common A to B Male/Male type peripheral cable. May come in White or Black.

Description	Code	1+
USB cable A to B	4109	£2.00



USB NOODLE CABLE

A 1M White Anti-Tangle (flat type) USB Type-A to Micro-B USB Noodle cable.

Description	Code	1+	10+
USB noodle cable	4154	£1.50	£1.25



3.5MM JACK LEADS

Stereo 3.5mm jack leads, with ground and one (mono) or two (stereo) channels connected to a 50cm lead.

Description	Code	1+	10+	100+
3.5mm mono jack lead	4105	£0.39	£0.32	£0.27
3.5mm stereo jack lead	4111	£0.54	£0.47	£0.44



3.5MM TO 3.5MM STEREO JACK CABLE

A 3.5mm to 3.5mm stereo jack lead. Length 1.2m.

Description	Code	1+	10+
3.5mm to 3.5mm stereo jack cable	4126	£0.99	£0.79



TWISTED JST

This is a simple two wire cable. Great for jumping from board to board. 2-pin JST connector on one end, bare cable on the opposite end.

Description	Code	1+
Twisted JST cable	4159	£0.95



COMPONENT STARTER KIT

No classroom should be without this component starter pack. Containing over 1400 parts, including LEDs, resistors, capacitors, transistors, switches, buzzers, battery holders & battery snaps. Supplied in a multi-compartment box. Full contents listed below.

Kit contents:

- Red 5mm LED x 50.
- Green 5mm LED x 50.
- Yellow 5mm LED x 50.
- White 5mm LED x 25.
- Blue 5mm LED x 25.
- Panel mount LED clip x 50.
- NPN transistor (BC547) x 50.
- PNP transistor (BC558) x 50.
- 1nF, 10nF, 100nF capacitor, 50 of each.
- 1µF, 10µF, 100µF capacitor, 25 of each.
- 10K trimmer potentiometers x 25.
- 100Ω, 220Ω, 330Ω, 470Ω, 1KΩ, 10KΩ, 100KΩ, 1MΩ, 100 of each resistor.
- Piezo buzzer with drive x 5.
- Push to make switch red x 10.
- Miniature slide switch x 10.
- Heavy duty PP3 battery snap x 25.
- 3x AA battery cage x 2.
- 4x AA battery cage x 2.

Description	Code	1+
Component starter kit	2304	£45.00



LED KIT

The LED kit contains red, green & yellow LEDs in 3mm round, 5mm round and 10mm round sizes, as well as some colour changing LEDs, Tri colour LEDs and LED panel mounting holders. Over 100 parts are supplied in a multiple compartment storage box.

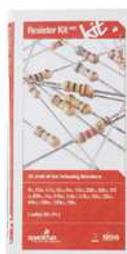
Description	Code	1+	
LED kit	2327	£12.45	



RESISTOR KIT - 1/4 W (1550 TOTAL)

The resistor kit contains 31 different resistors, 6 per decade (10, 15, 22, 33, 47, 68, 100, etc) to cover values between 10 ohms and 1 meg ohm, with 50 of each value. There are over 1,500 resistors in total. Each value is placed into a labelled grip seal bag to make up a box of resistors. Supplied with information on resistor identification.

Description	Code	1+	
Resistor kit - 1/4 W (1550 total)	2302	£14.50	



RESISTOR KIT - 1/4W (500 TOTAL)

The resistor kit contains a range of 20 different resistors covering values from 0 Ohms to 1 Meg Ohms (25 of each). Supplied in an easy to use tri-fold pack.

Description	Code	1+	
Resistor kit - 1/4W (500 total)	4682	£9.85	

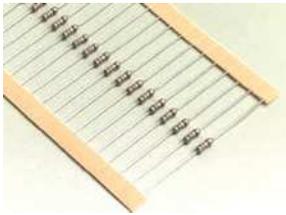


SPACER KIT

The spacer kit contains M3 plastic spacers in different lengths and a variety of bolts. All the project PCBs can be mounted using these spacers. All the parts are placed into a multiple compartment storage box for ease of use. The kit contains a total of 300 pieces allowing 25 PCBs to be mounted.

Description	Code	1+	5+
Spacer kit	2202	£15.45	£14.95

RESISTORS



These resistors are available in either packs of 100 or boxes of 1,000.

To order simply use 3003 for a pack of 100 or 3004 for a box of 1,000 and append the

desired value to the code. Example, for a pack of 100 x 10K resistors you would use a code of 3003-10K.

i 0.25W resistors with 5% tolerance.

The following values are available:

0R						
1R			4R7			
10R	15R	22R	33R	47R	68R	
100R	150R	220R	330R	470R	680R	
1K	1K5	2K2	3K3	4K7	6K8	
10K	15K	22K	33K	47K	68K	
100K	150K	220K	330K	470K	680K	
1M	1M2				4M7	10M

Description	Code	1+
Pack of 100 resistors	3003 plus value (see above for details)	£0.68
Box of 1000 resistors	3004 plus value (see above for details)	£5.65

THERMISTORS

Thermistors change resistance depending upon temperature. They are available in two resistance values. Sold in packs of 10.



Description	Code	1+
2.2k thermistor - 10 pack	3006-2k2	£2.69
4.7k thermistor - 10 pack	3006-4k7	£2.69

WIREWOUND RESISTOR

A higher power resistor that can be used with power LEDs and other higher current devices. Sold in packs of 10.



Description	Code	1+
2.5W, 2.2 ohms - 10 pack	3009-2R2	£1.60
2.5W, 10 ohms - 10 pack	3009-10R	£1.60
2.5W, 33 ohms - 10 pack	3009-33R	£1.60

INDUCTOR 470µH

Axial inductor. Sold in packs of 10.



Description	Code	1+
470µH inductor - 10 pack	3008-470UH	£2.50

RESETTABLE FUSE 0.05A 60VDC



Resettable fuse. Trip current 100mA, hold current 50mA. Max voltage 60V.

Code	1+	10+
2992	£0.68	£0.49

LINEAR POTENTIOMETERS



16mm linear PCB mounting potentiometer. Carbon track with serrated shaft. Fixing hardware included.

Description	Code	1+	50+	500+
10k	3010-10K	£0.55	£0.50	£0.45
100k	3010-100K	£0.55	£0.50	£0.45
1M	3010-1M	£0.55	£0.50	£0.45

DUAL WIPE POTENTIOMETERS



A carbon track, dual 10K potentiometer with serrated shaft. Fixing hardware included.

Description	Code	1+	10+	100+
10k	3007-10K	£1.15	£0.90	£0.70



POTENTIOMETER KNOB

Push fit potentiometer knob. Fits 6mm splined shaft, compatible with our range of 16mm commercial potentiometers (top left).

Description	Code	1+	10+
Blue / Black	2044	£0.35	£0.22
Green / Black	2045	£0.35	£0.22
Red / Black	2046	£0.35	£0.22
Yellow / Black	2047	£0.35	£0.22
Grey / Black	2048	£0.35	£0.22
Black / Grey	2053	£0.35	£0.22

PCB TRIMMER POTENTIOMETERS



An enclosed, single turn, trimming potentiometer. Designed to be directly mounted on to the PCB.

Description	Code	1+
10k - 25 pack	3001-10K	£2.80
47k - 25 pack	3001-47K	£2.80
100k - 25 pack	3001-100K	£2.80
220k - 25 pack	3001-220K	£2.80
1M - 25 pack	3001-1M	£2.80
10M - 25 pack	3001-10M	£2.80



100µF LOW LEAKAGE CAPACITOR

A 100µF, low-leakage electrolytic capacitor.
Rated voltage = 10V. Pack of 25.

Description	Code	1+
100µF low leakage capacitor - 25 pack	3104-100U	£1.35



1F SUPER CAPACITOR, 5.5V

Super capacitors are perfect for applications where the capacity of a standard electrolytic capacitor is too small and a rechargeable battery is bigger than needed. This 1F capacitor will run an LED for around 10 minutes. 1F, max voltage 5.5V, dia 20mm, height 6.5mm, lead pitch 6mm.

Description	Code	1+	10+	100+
1F super capacitor, 5.5V	3103-1F	£1.50	£1.10	£0.95

MATERIALS!

VIEW OUR FULL RANGE OF MATERIALS ONLINE



www.kitronik.co.uk/materials





CERAMIC CAPACITORS

A general purpose, high quality ceramic disc capacitor.
Rated voltage = 50V (except 39pF which is 100V).

Description	Code	1+	10+
100V, 22pF - 50 pack	3101-22P	£1.40	£1.20
100V, 33pF - 50 pack	3101-33P	£1.40	£1.20
100V, 39pF - 50 pack	3101-39P	£1.40	£1.20
50V, 180pF - 50 pack	3101-180P	£0.80	£0.60
50V, 220pF - 50 pack	3101-220P	£0.80	£0.70
50V, 330pF - 50 pack	3101-330P	£0.80	£0.60
50V, 470pF - 50 pack	3101-470P	£0.80	£0.60
50V, 1nF - 50 pack	3101-1N	£0.85	£0.65
50V, 2.2nF - 50 pack	3101-2N2	£0.85	£0.65
50V, 3.3nF - 50 pack	3101-3N3	£0.85	£0.65
50V, 4.7nF - 50 pack	3101-4N7	£0.85	£0.65
50V, 10nF - 50 pack	3101-10N	£0.85	£0.65
50V, 22nF - 50 pack	3101-22N	£0.95	£0.75
50V, 47nF - 50 pack	3101-47N	£1.60	£1.35
50V, 100nF - 50 pack	3101-100N	£1.45	£1.25
50V, 220nF - 25 pack	3101-220N	£1.60	£1.35
50V, 470nF - 10 pack	3101-470N	£1.10	£1.00



ELECTROLYTIC CAPACITORS

A general purpose, high quality electrolytic capacitor.

Description	Code	1+	10+
Capacitor, electrolytic, 50V, 0.47 μ F - 25 pack	3102-470N	£1.00	£0.90
Capacitor, electrolytic, 50V, 1 μ F - 25 pack	3102-1U	£0.90	£0.60
Capacitor, electrolytic, 50V, 2.2 μ F - 25 pack	3102-2U2	£0.90	£0.60
Capacitor, electrolytic, 50V, 4.7 μ F - 25 pack	3102-4U7	£0.90	£0.60
Capacitor, electrolytic, 16V, 10 μ F - 25 pack	3102-10U	£0.75	£0.45
Capacitor, electrolytic, 16V, 22 μ F - 25 pack	3102-22U	£0.95	£0.65
Capacitor, electrolytic, 16V, 47 μ F - 25 pack	3102-47U	£0.95	£0.65
Capacitor, electrolytic, 16V, 100 μ F - 25 pack	3102-100U	£0.80	£0.50
Capacitor, electrolytic, 25V, 100 μ F - 25 pack	3102-100U-25V	£1.10	£0.80
Capacitor, electrolytic, 16V, 220 μ F - 25 pack	3102-220U	£1.10	£0.80
Capacitor, electrolytic, 16V, 470 μ F - 25 pack	3102-470U	£1.80	£1.50
Capacitor, electrolytic, 10V, 1mF - 25 pack	3102-1M	£1.80	£1.50
Capacitor, low impedance electrolytic, 16V, 1000 μ F	3102-1000U	£0.24	£0.13
Capacitor, electrolytic, 10V, 2.2mF - 25 pack	3102-2M2	£3.30	£2.80

BUZZERS WITH BUILT IN DRIVE



PIEZO BUZZER

Low cost miniature piezo buzzer with built in drive circuitry and flying leads. Pack of 10.

Voltage: 3 – 24V DC.
Current: 15mA.
Dimensions: 32 mm dia. x 14mm high.
Frequency: 3.7 kHz.
Output: 90db @30cm.

Description	Code	1+
Piezo buzzer - 10 pack	3301	£7.55



MINIATURE BUZZER

Low cost miniature buzzer with built in drive circuitry and flying leads. Pack of 10.

Dimensions: L 23, W 17, D 15mm.
Frequency: 400Hz.
Output: 75db @ 30cm.
Current: 30mA.

Description	Code	1+
Miniature buzzer 3V - 10 pack	3305	£6.75
Miniature buzzer 6V - 10 pack	3306	£6.75
Miniature buzzer 9V - 10 pack	3307	£6.75



PCB MOUNT BUZZER

Miniature PCB mount buzzers with built in drive circuit (as used on our wireless steady hand kit).

3111 – Voltage: 9 – 15V DC.
Current: 30mA max.
Dimensions: 12 dia, 7.5 high, 7.6 pitch (mm).

3342 – Voltage: 4 – 7V DC.
Current: 30mA max at 5V.
Dimensions: 12 dia, 9.5 high, 7.6 pitch (mm).

Description	Code	1+	10+
PCB mount buzzer 12V	3311	£0.58	£0.45
PCB mount buzzer 5V	3342	£0.60	£0.55

BUZZERS WITHOUT DRIVE



PIEZO BUZZER (NO DRIVE)

Low cost miniature piezo buzzer with flying leads. Requires external drive circuit. Pack of 10.

Voltage: 3 – 30V DC.

Current: 2mA.

Resonant freq: 3.8 kHz.

Dimensions: 24 mm dia. x 5.5 mm high.

Description	Code	1+
Piezo buzzer (no drive) - 10 pack	3303	£5.80



PCB PIEZO BUZZER

Miniature PCB mount piezo buzzer. Requires external drive circuit.

Voltage: 3 – 25V DC.

Current: 1.5mA @ 5V.

Dimensions: 17 dia, 9 high, 10 pitch (mm).

Description	Code	1+	10+	100+
Piezo buzzer	3308	£0.55	£0.42	£0.37



0.25W 8 OHM 40MM THIN SPEAKER

At a thickness of only 4mm this is the perfect speaker for projects that produce sound but where space is tight or where the speaker needs to be discreet. These speakers work well with the BBC micro:bit and with our mono amp kit.

Description	Code	1+
0.25W 8 ohm 40mm thin speaker	3341	£0.95



½W SPEAKERS

8 ohm miniature paper cone speakers. Pack of 10.

Description	Code	1+
8 ohm 50mm diameter speaker - 10 pack	3302	£5.50
8 ohm 66mm diameter speaker - 10 pack	3304	£5.55



2W 5CM FULL RANGE 8 OHM SPEAKER

A high quality, full range, 5 cm (2") miniature speaker with plastic diaphragm and metal basket. Its compact dimensions make it suitable for signal output in machines and other equipment where space is at a premium.

Description	Code	1+	10+
2W 5cm full range 8 ohm speaker	3313	£1.80	£1.65



5W 6.5CM FULL RANGE 4 OHM SPEAKERS

When the budget doesn't stretch to the high power amp and you have selected the mono or stereo amplifier then you can improve the sound quality by adding this speaker. It is 65 mm, 5W full range speaker whilst the circuit board won't drive the speaker at its full potential it will still sound a whole lot better.

Description	Code	1+	10+	100+
5W 6.5cm full range 4 ohm speaker	3315	£3.95	£3.55	£3.15



6.5CM SQUARE SPEAKER GRILLES

This protective grille is designed to protect 65mm speakers and is a perfect match for our speaker code 3315 (which are used on our 3W Class D Amp kit). They are available in a square design. The protective mesh section is made of painted metal and the outer section is made of plastic.

Description	Code	1+	10+
6.5cm square protective speaker grille	3336	£3.85	£3.40



10W 8 OHM 100MM SQUARE MYLAR CONE SPEAKER

A 10W weatherproof Mylar cone speaker, designed for outdoor use as the Mylar cones are impervious to water or moisture. 100mm cone with square mounting plate.

Description	Code	1+	10+
10W 8 ohm 100mm square Mylar cone speaker	3322	£4.65	£4.30



20W 10CM FULL RANGE 8 OHM SPEAKER

This is a high quality 10 cm (4"), 8 ohm, full-range speaker with tweeter cone and European standard basket. Simple fitting in cases/vehicles with cut-outs for 10cm speakers. The sound quality is excellent and is ideal for many audio applications.

Description	Code	1+	10+
20W 10cm full range 8 ohm speaker	3312	£5.95	£5.45

TRANSISTORS

Description	Case	I max (mA)	Hfe min	Pack Qty	Code	1+
BC547 NPN	T092	100	200	50	2901	£1.40
BC558 PNP	T092	100	240	50	2902	£1.85
BC108 NPN	T018	100	120	25	2903	£7.45
BC337 NPN	T092	800	160	50	2938	£1.65
BC548B NPN	T092	100	200	50	2958	£1.85
2N7000 N ch FET	T092	200	N/A	25	2946	£1.95

ICs

Part	Description	Package	Code	1+	5+	100+
4011B	Quad 2 input NAND gate	DIL 14	2911	£0.40	£0.36	£0.32
4049B	Hex inverter	DIL 16	2948	£0.40	£0.36	£0.32
4071B	Quad 2 input OR gate	DIL 14	2912	£0.37	£0.32	£0.30
4081B	Quad 2 input AND gate	DIL 14	2913	£0.39	£0.35	£0.32
4510B	BCD up / down counter	DIL 16	2914	£0.78	£0.65	£0.45
4511B	BCD to 7 segment driver	DIL 16	2915	£0.58	£0.48	£0.34
4017B	Decade counter	DIL 16	2916	£0.52	£0.50	£0.46
L7805	5V regulator IC	TO220	2906	£0.41	£0.31	£0.24
LM324	Quad op amp	DIL 14	2907	£0.37	£0.27	£0.18
LM358	Dual op amp IC	DIL 8	2951	£0.35	£0.30	£0.24
LM386	Pre-amplifier	DIL 8	2949	£0.55	£0.49	£0.46
NE555	Single timer IC	DIL 8	2908	£0.30	£0.20	£0.13
NE556	Dual timer IC	DIL 14	2909	£0.44	£0.34	£0.25
NJM2073D	Stereo audio amplifier	DIL 8	2944	£0.65	£0.55	£0.50
TDA7297	15W+15W Dual bridge amplifier	Multiwatt 15	2952	£3.80	£2.80	£2.17

THYRISTORS & DIODES

Part	Description	Package	Pack Qty	Code	1+	10+	100+	1000+
2N5061	Thyristor	T092	25	2904	£3.45			
1N4001	Diode (1A)	DO-41	100	2905	£1.70	£1.45		
1N4148	Signal diode (150mA)	DO-41	100	2943	£0.85			
BAT41	Schottky signal diode	DO-35	25	2950	£2.50			
1N5400	Diode (3A)	DO-27	1	2953	£0.17	£0.07	£0.06	£0.05



IC SOCKETS

Low profile DIL sockets with dual wipe tin plated contacts, stamped and formed.

Standard pitch: 0.1" (2.54mm). **Height:** 5mm above PCB.

Description	Code	1+
IC socket 8 pin - tube of 60	2930	£1.45
IC socket 14 pin - tube of 34	2931	£1.45
IC socket 16 pin - tube of 30	2932	£1.45
IC socket 18 pin - tube of 26	2941	£1.45



RELAY HF7FD

Sub-miniature single pole changeover relay.

Current rating: 10A. **Dimensions:** 22.5 x 16.5 x 16.5 mm.

Operation time: 10mS. **Coil resistance:** 6V = 100Ω.

Description	Code	1+	10+
Relay HF7FD SPC0 10A, 6V	2977	£1.15	£1.05



TERMINAL BLOCKS

2 (25pk), 3 (10pk) and 4 (10pk) way terminal blocks with a 5mm pin spacing.

Description	Code	1+
2 way terminal block - 25 pack	4161	£2.75
3 way terminal block - 10 pack	4170	£2.75
4 way terminal block - 10 pack	4171	£2.75



12 WAY TERMINAL BLOCK

Standard commercial quality 12 way terminal blocks. Made of polythene and can be easily sub-divided. Max current 5 Amps. Pack of 10.

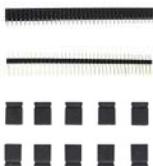
Description	Code	1+
12 way terminal block - 10 pack	2410	£3.29



STRAIGHT SINGLE ROW PIN STRIP / SOCKET

Single / double row pin headers and turned pin sockets. 2.54mm spacing, suitable for programming and connector applications. Can be cut to length.

Description	Code	1+	10+
Straight single row PCB pin headers - 36 way	4133	£0.27	£0.20
Straight single row turned pin sockets - 36 way	4134	£2.12	£1.95
Straight double row PCB pin headers, 2 x 20-way	4151	£0.37	£0.24
Closed link jumper - 10 pack	4139	£0.50	





MINIATURE PUSH TO MAKE SWITCH

Miniature push button, push to make, red. L 28, D 10mm. Pack of 25.

Description	Code	1+
Push to make switch - 25 pack	3401	£3.60



MINIATURE PUSH TO BREAK SWITCH

Miniature push button, push to break, black. L 30, D 12mm. Pack of 10.

Description	Code	1+
Push to break switch - 10 pack	3402	£3.50



FLAT PROFILE TACTILE SWITCH

A low profile PCB mount switch. Single pole normally open contact.
L 6, W 6, H 4.3mm. Pack of 25.

Description	Code	1+
Flat profile TACT switch - 25 pack	3420	£2.25



PCB MOUNT SLIDE SWITCH

Right angle PCB mount slide switch. SPDT contacts.
L 14, W 13.2, H 9.4mm. Pack of 10.

Description	Code	1+
PCB mount slide switch - 10 pack	3415	£2.95



MINIATURE PCB MOUNT SLIDE SWITCH - 10 PACK

Right angle PCB mount slide switch. SPDT contacts.
L 8.5, W 3.5, H 3.5mm. Pack of 10.

Description	Code	1+	10+
Miniature PCB mount slide switch - 10 pack	3422	£1.70	£1.60



ULTRA MINIATURE SPDT SLIDE SWITCH

Body dimensions: L 20, W 5, H 15mm. Pack of 10.

Description	Code	1+
Ultra miniature SPDT slide switch - 10 pack	3442	£1.70



DPDT SLIDE SWITCH

Standard DPDT slide switches with solder tag connections.

L 22, W 8, H 13mm. Pack of 10.

Description	Code	1+
Standard slide switch (large) - 10 pack	3416	£2.80
Centre off slide switch (large) - 10 pack	3417	£2.80



MINIATURE DPDT SLIDE SWITCH

Miniature DPDT slide switch.

L 15, W 7, H 18mm. Pack of 10.

Description	Code	1+
Miniature DPDT slide switch - 10 pack	3404	£1.70



SPST ROCKER SWITCH

SPST rocker switch black, rectangular, snap fit.

L 21, W 9.6, H 28.5mm. Pack of 10.

Description	Code	1+
SPST black 'I/O' actuator - 10 pack	3406	£3.90



SPST ROUND ROCKER SWITCH

SPST rocker switch black, round, snap fit.

L 16.5, Dia 23mm. Pack of 10.

Description	Code	1+
SPST round rocker switch - 10 pack	3407	£3.25



SPST WHITE ROUND ROCKER SWITCH

With quick-connect SPST contacts and a simple on off action featuring snap-in mounting. 23mm diameter. Pack of 10.

Description	Code	1+
SPST White Round Rocker Switch - 10 pack	3443	£5.50



SPST 15MM MINI ROUND ROCKER SWITCH

With quick-connect SPST contacts and a simple on off action featuring snap-in mounting. 15mm diameter. Pack of 10.

Description	Code	1+
SPST 15mm Mini Round Rocker Switch - 10 pack	3444	£5.20



MINIATURE SPST TOGGLE SWITCH

SPST standard toggle switch. Body dimensions: **L** 13, **W** 8, **H** 9.5mm.

Description	Code	1+	10+
SPST toggle switch	3425	£0.55	£0.45



MINIATURE SPDT TOGGLE SWITCH

SPDT miniature toggle switch.

Body dimensions: **L** 13, **W** 8, **H** 9.5mm. Pack of 10.

Description	Code	1+
Miniature SPDT toggle switch - 10 pack	3423-10	£4.25



SPST SUB MINIATURE TOGGLE SWITCH

SPST sub miniature toggle switch.

Body dimensions: **L** 8.1, **W** 5.1, **H** 8.6mm. Pack of 10.

Description	Code	1+
Sub-Miniature toggle switch SPST - 10 pack	3413	£4.95



SPST SQUARE LATCHING SWITCH

SPST square latching switch. **L** 34, **W** 15, **H** 15mm. Pack of 10.

Description	Code	1+
Square latching push button switch - 10 pack	3405	£3.55



NON-MERCURY TILT SWITCH

Non-Mercury tilt switch. Horizontal mounting with make to break changeover at 10° either side of horizontal. **L** 10.2, **Dia** 4.7mm.

Description	Code	1+
Non-Mercury tilt switch	3419	£1.10



SPDT MICRO SWITCHES

SPDT micro switch, solder terminals. **L** 20.1, **W** 6.5, **H** 10.2mm. Pack of 10.

Description	Code	1+
Medium lever micro switch - 25mm Lever - 10 pack	3403	£4.95
Long lever micro switch - 45mm Lever - 10 pack	3421	£5.80



ARCADE JOYSTICK

A heavy duty 4-way Pacman-type arcade joystick. The joystick uses four microswitches to detect on / off position and has an ABS plastic and solid alloy construction.

Description	Code	1+
Arcade joystick - medium handle	3426	£6.49



ARCADE PUSH BUTTONS

These 33mm round momentary convex push buttons are available in a range of bold colours, similar to the ones that you find on arcade games and have a simple screw in design.

Description	Code	1+	50+	100+
Arcade push button 33mm - Pink	4676	£0.78	£0.65	£0.52
Arcade push button 33mm - Blue	4677	£0.78	£0.65	£0.52
Arcade push button 33mm - Green	4678	£0.78	£0.65	£0.52
Arcade push button 33mm - Yellow	4679	£0.78	£0.65	£0.52



RESISTIVE ANALOGUE THUMB JOYSTICK

This is a self-centring spring loaded analogue joystick, similar to those found on the PSP1000. These compact joysticks have an interesting slide feel which makes it easier for the user to feel how far they've moved. This thumb slide joystick outputs two analogue voltages that represent the X and Y axis positions. It is rated at a supply voltage of 5V but we have found no issues when using it at 3V. They work well with the BBC micro:bit.

Description	Code	1+
Resistive analogue thumb joystick	4690	£3.20



THUMB JOYSTICK

This joystick is very similar to the joysticks on PlayStation 2 controllers. Directional movements are simply two potentiometers - one for each axis (~10K Ohm each). This joystick also has a select button that is actuated when the joystick is pressed down. There is also a breakout board which makes integrating the joystick into a project even easier.



Description	Code	1+
Thumb joystick	4691	£3.35
Thumb joystick breakout PCB	4692	£2.00



3MM STANDARD DIFFUSED LED

Colour	Typical mCd	Code	1+	10+	100+	500+	1000+
Red	275	3501	£0.10	£0.05	£0.04		£0.03
Green	35	3502	£0.10	£0.05	£0.04		£0.03
Yellow	125	3503	£0.10	£0.05	£0.04		£0.03



3MM STANDARD WATER CLEAR LED

Colour	Typical mCd	Code	1+	10+	100+	500+	1000+
Red	1000	3598	£0.10	£0.05	£0.04		£0.03
White	2750	35103	£0.15	£0.09	£0.08	£0.07	



5MM STANDARD DIFFUSED LED

Colour	Typical mCd	Code	1+	10+	100+	500+	1000+
Red	275	3504	£0.10	£0.05	£0.04		£0.03
Green	35	3505	£0.10	£0.05	£0.04		£0.03
Yellow	125	3506	£0.10	£0.05	£0.04		£0.03
White	700	3542	£0.15	£0.09	£0.08	£0.07	
Blue	500	3543	£0.15	£0.09	£0.08	£0.07	
Orange	275	3567	£0.10	£0.05	£0.04		£0.03



5MM UV LED

5mm UV (ultra violet) LED is ideal for many lighting applications and products such as money checkers.

Typical mCd	Code	1+	10+	100+	500+
95	3566	£0.48	£0.39	£0.32	£0.28



Calculate the resistor value for your LED the easy way with our online calculator:

www.kitronik.co.uk/ledcalc



5MM STANDARD WATER CLEAR LED

Colour	Typical mCd	Code	1+	10+	100+	500+	1000+
Red	1150	35104	£0.10	£0.05	£0.04		£0.03
White	2250	35109	£0.16	£0.10	£0.09	£0.08	
Blue	1150	35108	£0.15	£0.09	£0.08	£0.07	



5MM FLASHING LED

5mm flashing LEDs in red, green, yellow, blue & white. The LEDs flash at around 2Hz when connected to a 5V supply.

Colour	Typical mCd	Code	1+	10+	100+	1000+
Red	3500	3538	£0.24	£0.14	£0.12	£0.10
Green	4000	3539	£0.24	£0.14	£0.12	£0.10
Yellow	3500	3540	£0.24	£0.14	£0.12	£0.10
Blue	3500	3545	£0.24	£0.14	£0.13	£0.11
White	8400	3592	£0.26	£0.16	£0.14	£0.13



5MM WIDE ANGLE WHITE LED

A 5mm, wide angle, high brightness white LED. Viewing angle = 140°

Typical mCd	Code	1+	10+	100+	500+
3000	3546	£0.37	£0.27	£0.21	£0.16

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COLOUR CHANGING LED

These LEDs cycle through various colours, making them ideal for mood lighting, toys or ornaments.

Operating voltage: 2.7V to 5V. **Current consumption (avg):** 25mA. **Lens:** Diffused.



^ Usage example.

Description	Code	1+	10+	100+	500+
5mm Superbright, slow cycle	3527	£0.52	£0.43	£0.37	£0.32
5mm Superbright, fast cycle	3560	£0.52	£0.43	£0.37	£0.32
5mm Bright, slow cycle	3591	£0.48	£0.39	£0.32	£0.27
10mm Superbright, slow cycle	3544	£0.58	£0.48	£0.43	£0.38



5MM YELLOW CANDLE LED

This LED flickers to produce a look similar to that of a candle. This makes it ideal for mood lighting, toys or ornaments.

Operating voltage: 2.5V to 5V (this LED does not require a current limit resistor)

Description	Typical mCd	Code	1+	10+	100+	1000+
Candle LED	5800	3590	£0.30	£0.26	£0.22	£0.20



5MM RGB LED

This 5mm RGB LED contains three LED elements (red, green and blue). Each element can be controlled independently. LEDs 3551 and 3574 have a water clear lens and 35125 has a diffused lens.

Description	Typical mCd	Code	1+	10+	100+	500+
Common anode	2100	3551	£0.50	£0.40	£0.35	£0.30
Common cathode	2100	3574	£0.50	£0.40	£0.35	£0.30
Common cathode - diffused	500	35125	£0.50	£0.40	£0.35	£0.30



5MM TRICOLOUR LED - 25 PACK

This 5mm LED is a red, green & orange LED in one package.

Description	Typical mCd	Code	1+
Tricolour LED - 25 pack	650	3511	£3.50



5MM RED BIKE LIGHT LED - 50 PACK

Typical mCd	Code	1+
1000	3507	£4.50



5MM ULTRABRIGHT WATER CLEAR LED

Colour	Typical mCd	Code	1+	10+	100+	500+
White	5000	3524	£0.30	£0.25	£0.20	£0.16
Blue	3500	3537	£0.30	£0.24	£0.20	£0.16



5MM MEGABRIGHT WATER CLEAR LED

Colour	Viewing angle	Typical mCd	Code	1+	10+	100+	500+
White	15°	17500	3549	£0.40	£0.32	£0.28	£0.24
White	30°	17500	3550	£0.40	£0.32	£0.28	£0.24
Red	15°	17500	3575	£0.30	£0.22	£0.19	£0.16
Red	30°	9500	3579	£0.30	£0.22	£0.19	£0.16
Yellow	15°	17500	3576	£0.30	£0.22	£0.19	£0.16
Yellow	30°	9500	3580	£0.30	£0.22	£0.19	£0.16
Green	15°	17500	3577	£0.30	£0.22	£0.19	£0.16
Green	30°	9500	3581	£0.30	£0.22	£0.19	£0.16
Blue	15°	8500	3578	£0.30	£0.22	£0.19	£0.16
Sakura*	15°	8400	35118	£0.24	£0.15	£0.11	

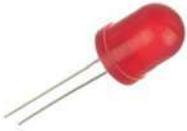
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LOOKING FOR **PERSPEX** OR
OUR **OTHER MATERIALS**?

Our Materials section starts on **page 194**.



For more information on LED forward voltages, viewing angles and brightness levels, see our online datasheet: www.kitronik.co.uk/leddata



10MM HIGH BRIGHTNESS DIFFUSED LED - 10 PACK

Colour	Typical mCd	Code	1+
Red	900	3583-10	£1.50
Green	1750	3584-10	£1.50
Yellow	900	3585-10	£1.50
White	1750	3586-10	£2.20



PANEL MOUNT LED CLIP

Holder clips for panel mounting LEDs.

5mm LED holder bezel: 8mm dia. 10mm LED holder bezel: 16mm dia.

Size	Pack Quantity	Code	1+
5mm	50	3541	£1.99
10mm	25	3582	£4.25



5MM CHROME BEZEL LED HOLDER

Chrome plated brass recessed holder for 5mm LEDs.

Panel cutout size: 8mm dia. Complete with fixing hardware.

Description	Code	1+	10+
5mm chrome bezel LED holder	35112	£0.43	£0.39



10MM STANDARD DIFFUSED LED

Colour	Typical mCd	Code	1+	10+	100+	250+
Red	350	3508	£0.15	£0.12	£0.10	£0.08
Green	350	3509	£0.15	£0.12	£0.11	£0.09
Yellow	500	3510	£0.15	£0.12	£0.11	£0.09



KITRONIK ZIP LEDs

Add light to your latest project with ZIP LEDs:


www.kitronik.co.uk/zips



LED STAR

These power LED stars offer an extremely high light output in an energy efficient way.

Description	Typical mCd	Code	1+	10+	25+
1W warm white power LED star	45000	3547	£1.65	£1.55	£1.45
3W white power LED star	67000	3548	£2.10	£2.00	£1.90



WHITE SUPER FLUX 5MM LED

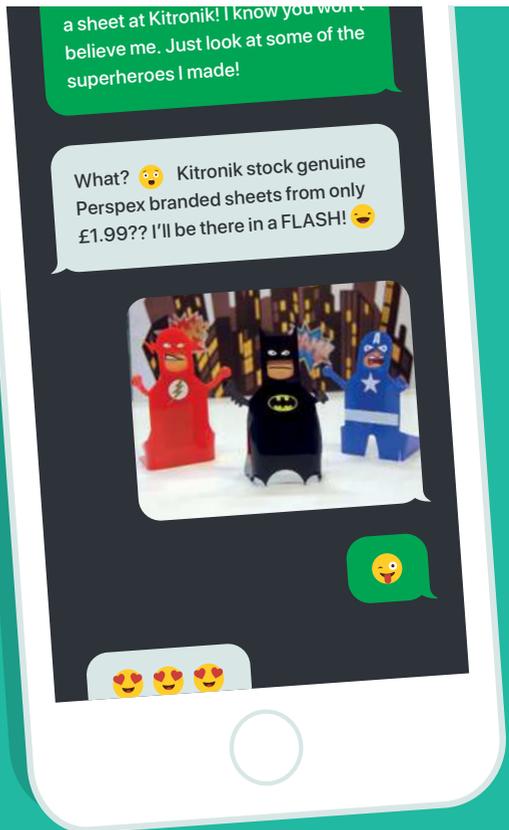
Colour	Typical mCd	Code	1+	10+	100+	500+
White	1800	3597	£0.30	£0.22	£0.19	£0.16



www.kitronik.co.uk/fluxled

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SHEETS

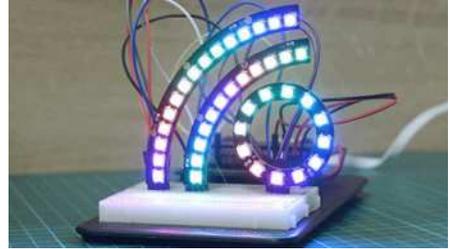
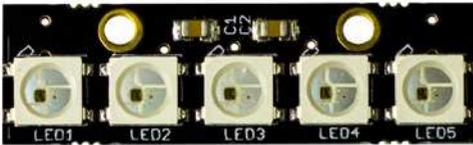
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KITRONIK ZIP LEDs

Kitronik ZIP LEDs are addressable RGB LEDS. Each LED can be controlled independently and all LEDs are connected using the same three wire bus. Each LED can produce a full spectrum of colours independent to the other LEDs on the same stick. Multiple sticks, arcs, and circles can be connected together to produce a variety of shapes. ZIP LEDs are based on the WS2812B part and are compatible with WS2812B driver code.

i The boards work from a supply voltage of 3.5V to 5V.



< ZIP Stick (35129).

^ The ZIP LEDs in use.

✓ ZIP Circle (35135).

✓ ZIP Arc – 12 ZIP LEDs (35134).

✓ ZIP Arc – 15 ZIP LEDs (35133).



For more information on the ZIP LED range visit



www.kitronik.co.uk/zips

Description	Code	1+	10+
ZIP Stick – 5 ZIP LEDs	35129	£2.75	£2.25
ZIP Arc – 15 ZIP LEDs	35133	£5.95	£4.85
ZIP Arc – 12 ZIP LEDs	35134	£4.85	£3.95
ZIP Circle – 12 ZIP LEDs	35135	£5.15	£4.25

FLEXIBLE ZIP LED STRIPS

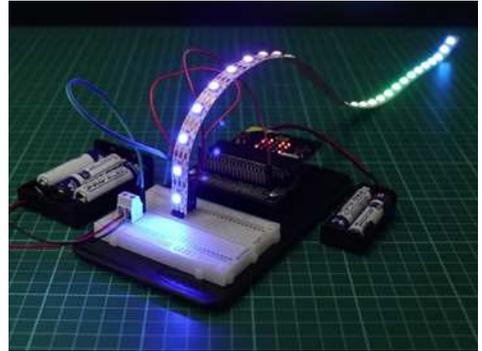
These Flexible ZIP Strips are supplied in 0.5m lengths. Multiple strips can be connected to produce longer strings/strips. If a smaller strip length is required they can be cut into shorter strips along the points marked on the strip. They are supplied with a self-adhesive backing.



^ Flexible 30 LED ZIP Strip (3558).



^ Flexible 50 LED ZIP Strip (3559).



^ Example of a Flexible LED ZIP Strip in use.



www.kitronik.co.uk/3558 or [/3559](http://www.kitronik.co.uk/3559)

Description	Code	1+	10+
Flexible 30 LED ZIP Strip 0.5m	3558	£10.00	£9.00
Flexible 50 LED ZIP Strip 0.5m	3559	£15.00	£13.50

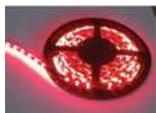
LEARN HOW TO USE OUR ZIP LEDs WITH OUR GUIDE:

www.kitronik.co.uk/codezip

FLEXIBLE LED STRIPS

These energy efficient flexible LED strips are extremely versatile. They can be used in a wide range of lighting applications and products. The strips are adhesive backed and run off a 12DC supply. The strips can be cut into sections.

30 way = 30 LEDs per 1m with 10cm cut points.



FLEXIBLE LED STRIP - 0.5M

Description	Code	1+	10+
Red flexible LED strip, 30 way - 0.5m	3552	£6.50	£6.00
Green flexible LED strip, 30 way - 0.5m	3553	£6.50	£6.00
Blue flexible LED strip, 30 way - 0.5m	3554	£6.50	£6.00
Yellow flexible LED strip, 30 way - 0.5m	3555	£6.50	£6.00
White flexible LED strip, 30 way - 0.5m	3556	£6.50	£6.00



FLEXIBLE LED STRIP - 5M

Description	Code	1+
Red flexible LED strip, 30 way - 5m	3552-5M	£30.00
Green flexible LED strip, 30 way - 5m	3553-5M	£30.00
Blue flexible LED strip, 30 way - 5m	3554-5M	£30.00
Yellow flexible LED strip, 30 way - 5m	3555-5M	£30.00
White flexible LED strip, 30 way - 5m	3556-5M	£30.00

CHOOSING A PSU FOR YOUR LED STRIPS

LED strips are very easy to use, but you need to make sure the power supply has sufficient capacity for the length of LED strips being used. As all the colours of LED strips take about 400 mA per meter, the longer the length of strip the bigger the power supply has to be. To save you doing the maths below is a table showing the maximum length for each of the power supplies.



www.kitronik.co.uk/ledstrips

Max length	Power supply	Code	Page
1.25m	12V, 500mA, wall plug PSU	2260	150
5m (1 reel)	12V, 2A, wall plug PSU	2266	150



PHOTOTRANSISTOR LTR-4206

A Lite-On LTR-4206 Phototransistor (RoHS compliant) in a low cost plastic package (4mm dia.). It has been lensed for high light sensitivity.

Description	Code	1+
Phototransistor LTR-4206 - 10 pack	35139	£2.19



MES LAMP HOLDER

Description	Code	1+
MES lamp holder (with plastic base) - 25 pack	3516	£4.50



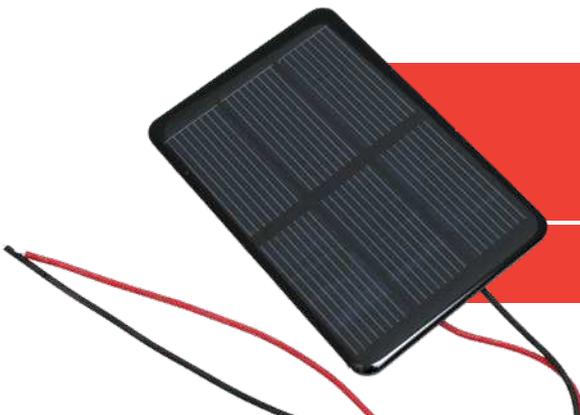
MES LAMP HOLDER (ECONOMY)

Description	Code	1+
MES lamp holder (economy) - 50 pack	3517	£2.95



MES BULBS

Description	Code	1+
MES bulb 1.5V, pack of 50	3518	£4.20
MES bulb 2.5V, pack of 50	3519	£4.20
MES bulb 3.5V, pack of 50	3520	£4.20



LOOKING FOR SOLAR CELLS?

Head to [page 149](#).



HEATSHRINK

Heatshrink sleeving in various diameters.
It shrinks to around half the size when heated.

Description	Code	1+
Heatshrink mini reel, 1.6mm, 12m	2431	£7.45
Heatshrink mini reel, 2.4mm, 11m	2432	£7.45
Heatshrink mini reel, 3.2mm, 11m	2441	£7.45
Heatshrink mini reel, 4.8mm, 10m	2433	£7.45
Heatshrink mini reel, 6.4mm, 9m	2413	£7.45



FIGURE 8 SPEAKER CABLE

100m reels of flexible, black, speaker cable.
Available in 1A, 2 x (7x0.18mm) and 2.5A (13x0.18mm) options.

Description	Code	1+
Figure 8 speaker cable, 1A	2448	£9.95
Figure 8 speaker cable, 2.5A	2466	£12.50



TINNED COPPER WIRE

Tinned copper wire in a 16SWG gauge.
500g reel with an approximate length of 25m.

Description	Code	1+
Tinned copper wire – 500g reel	2412	£9.95



SOLDER ON!

Check out our range of soldering irons.
See **pages 185 – 186.**

WIRE

Rolls of wire, 10 and 100 metres in length and 1.2mm outer diameter are available in solid core or multi strand. Solid core (1 x 0.6mm core) cable is ideal for links on prototype board, strip board and PCBs. Multi strand (7 x 0.2mm cores) cable is ideal for connecting items to boards where the cable may flex. Available in black, red, blue, yellow, green and white.

Also available is extra flexible wire used in our steady hand game products. The wire's flexibility makes it ideal for many interconnecting tasks. This product is sold in 25 metre rolls and has a 2.8mm outer diameter.



Description	Code	1+
Solid core cable, 10m reel, red	2451	£2.30
Solid core cable, 10m reel, black	2452	£2.30
Multi-strand cable, 10m reel, red	2457	£1.85
Multi-strand cable, 10m reel, black	2458	£1.85
Solid core cable, 100m reel, black	2414	£7.40
Solid core cable, 100m reel, red	2415	£7.40
Solid core cable, 100m reel, blue	2416	£7.40
Solid core cable, 100m reel, yellow	2417	£7.40
Solid core cable, 100m reel, white	2464	£7.40
Solid core cable, 100m reel, green	2467	£7.40
Multi-strand cable, 100m reel, black	2418	£6.65
Multi-strand cable, 100m reel, red	2419	£6.65
Multi-strand cable, 100m reel, blue	2420	£6.65
Multi-strand cable, 100m reel, yellow	2421	£6.65
Multi-strand cable, 100m reel, white	2468	£6.65
Multi-strand cable, 100m reel, green	2469	£6.65
Extra flexible wire, 25m, black	2424	£4.70



JUMPER WIRES

These are 20cm long jumpers. Multiple jumpers can be installed next to one another on a 0.1" header. Available in packs of 40.

Description	Code	1+
Jumper wires 20cm M/M - pack of 40	4110-40	£2.50
Jumper wires 20cm M/F - pack of 40	4128-40	£2.50



WIRE KIT

The wire kit contains 14 different lengths of wire from 0.1" to 5". The wires are insulated in different colours and are formed ready for use. They come in a handy storage case and are ideal for use with the prototype board.

Description	Code	1+
Wire kit - 140 pieces	2402	£4.65



BREADBOARD JUMPER WIRE PACK

Basic breadboard jumper wire pack (male to male). Including 4 different lengths: 260mm, 220mm, 180mm and 120mm. Perfect design for a breadboard. Contains approx 65 pieces.

Description	Code	1+
Breadboard Jumper Wire Pack	4168	£2.25



Why not let us take the trouble out of manufacturing your school's PCBs and you can share the volume savings we receive. For details on this service see the Kitronik web site (including a price estimator) or alternatively call our sales team.



MINI PROTOTYPE BOARD

A board for prototyping circuits. Components and wires can be placed into the board and the circuit built and tested without soldering. Multiple boards can be interconnected. This board has 170 tie points.

i Components not included.

Description	Code	1+	10+
Mini prototype board	2446	£1.79	£1.59



PROTOTYPE BOARDS

Components and wires can be placed into the board and the circuit built and tested without soldering. Multiple boards can be interconnected. Includes blue and red labelled 'power rail' along the length of the board on both edges.

Description	Code	1+	10+	50+
Large prototype board - PBU202 - 830 tie points	2444	£4.15	£3.75	
Small prototype board - PBU301 - 400 tie points	2401	£2.95	£2.55	£2.10



STRIP BOARDS

Strip boards are ideal for prototypes or projects. Boards have a 0.1" pitch hole spacing and hole diameter of 1mm. Sold in sizes of 160 x 100mm (pack of 5, 35 strips x 61 holes) and 100mm x 250mm (35 strips and 95 holes).

Description	Code	1+	10+
Stripboards, 100 x 160 mm - 5 pack	2404	£8.45	
Stripboards, 100 x 250 mm	2439	£2.40	£2.20



STRIP BOARD CUTTER

A strip board cutter used to break the tracks on strip board.

Description	Code	1+	5+
Strip board cutter	2602	£2.80	£2.60



COPPER CLAD BOARD

Single sided copper clad board, 1.6mm thick.
Suitable for use with ferric chloride or routing.

Description	Code	1+	10+
Copper clad board, 100 x 160 mm	2434	£1.05	£1.00
Copper clad board, 305 x 457 mm	2435	£6.50	



ECONOMY PHOTO RESIST BOARD

Single sided copper clad board, 1.6mm thick, with a positive working photo resist coating. Protected by a peel off black plastic film. Ideally suited to making printed circuit boards.

Description	Code	1+	10+
Economy photo resist board SS 100 x 160 mm	2436	£3.50	£3.35
Economy photo resist board SS 305 x 457 mm	2437	£24.85	£24.05



COPPER TAPE – CONDUCTIVE ADHESIVE

This copper track tape is available in 5mm and 50mm widths and is supplied with adhesive, allowing it to be fixed on to a surface before components are soldered to it, in order to make a simple circuit. As the adhesive is conductive, a strip of tape can be placed on top of another piece of tape and it electrically connects. The tape is 0.031mm thick and the roll is approx 15m in length.

Description	Code	1+
Copper tape – Conductive Adhesive, 5mm (15m)	2477	£5.05
Copper tape – Conductive Adhesive, 50mm (15m)	2479	£19.50



COPPER TAPE

This copper track tape is 5mm wide and is supplied with adhesive, allowing it to be fixed on to a surface before components are soldered to it, in order to make a simple circuit. **The adhesive on this version is not conductive.** The tape is 0.03mm thick and the roll is approx 15m in length.

Description	Code	1+
Copper tape – Non Conductive Adhesive, 5mm (15m)	2478	£5.00

PAN HEAD M2 SCREWS

Description	Code	1+
Pan head M2 x 6mm machine screw - 100 pack	2316	£1.25
Pan head M2 x 16mm machine screw - 100 pack	2326	£3.15

PAN HEAD M3 SCREWS

Description	Code	1+
Pan head M3 x 6mm machine screw - 100 pack	2309	£0.75
Pan head M3 x 10mm machine screw - 100 pack	2310	£0.90
Pan head M3 x 12mm machine screw - 100 pack	2311	£0.95
Pan head M3 x 16mm machine screw - 100 pack	2339	£1.20
Pan head M3 x 30mm machine screw - 100 pack	2319	£2.15

COUNTER SUNK M3 SCREWS

Description	Code	1+
Counter sunk M3 x 6mm machine screw - 100 pack	2312	£1.60
Counter sunk M3 x 8mm machine screw - 100 pack	2334	£1.70
Counter sunk M3 x 10mm machine screw - 100 pack	2313	£1.70
Counter sunk M3 x 12mm machine screw - 100 pack	2314	£1.80

HEX FULL WIDTH NUT

Description	Code	1+
M2 full width nut, stainless steel, zinc plated - 100 pack	2325	£0.95
M3 full width nut, zinc - 100 pack	2315	£0.50
M3 full width nut, nylon - 100 pack	2330	£2.74
M3 stainless steel washer - 100 pack	2340	£0.48

PLASTIC SPACERS

These nylon spacers with an M3 thread are ideal for mounting PCBs or layering wood or plastic. 6.6mm dia, 5.5mm across flats.

Description	Code	1+
Plastic spacer 6mm - 100 pack	2335	£6.50
Plastic spacer 8mm - 100 pack	2306	£6.50
Plastic spacer 10mm - 100 pack	2333	£8.00
Plastic spacer 12.7mm - 100 pack	2307	£8.00
Plastic spacer 20mm - 100 pack	2308	£9.75
Plastic spacer 8mm M-F - 100 pack	2337	£7.00
Plastic spacer 10mm M-F - 100 pack	2317	£7.00

08

TOOLS & TEST EQUIPMENT

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ANTEX SOLDERING IRONS

Both of these Antex soldering irons have a **silicone heat resistant cable** which makes them much harder wearing and safer in a school environment. The CS18 18W iron is suitable for most soldering applications, the XS25 25W iron is ideal for situations where the extra power is needed for soldering larger parts.

Description	Code	1+	10+
Mains soldering iron - 18W	2609	£21.99	£20.99
Mains soldering iron - 25W	2640	£21.99	£20.99



ANTEX SOLDERING IRON STAND

Soldering iron stand with strong chromium plated steel spring with a heat resistant plastic base and integral sponge for bit cleaning.

Description	Code	1+
Soldering iron stand	2611	£5.75



SOLDERING IRON REPLACEMENT TIPS

Pack of 3 replacement tips.

Description	Code	1+
18W iron replacement tips - 3 pack	2606	£11.75
25W iron replacement tips - 3 pack	2641	£11.75
18W fine soldering iron tips - 3 pack	2663	£11.50



ANTEX REPLACEMENT SPONGES

Pack of 5 replacement sponges for soldering iron stand.

Description	Code	1+
Replacement sponges - 5 pack	2607	£4.25



FUME EXTRACTOR & FILTERS

A mains powered filter unit with a powerful 120mm fan, for removal of soldering fumes. Additional filter pads available separately.

Description	Code	1+
Fume extractor unit	2635	£29.99
Spare filters - 3 pack	2636	£3.00



ECONOMY SOLDERING IRON 25W

An economy 25W Soldering Iron. It is mains powered and perfect for occasional light use. Supplied with a pointed tip.

Description	Code	1+
Economy soldering iron - 25W	26101	£4.25



ECONOMY SOLDERING IRON STAND

An economy Soldering Iron Stand has a hollow base and includes a sponge for cleaning your soldering iron tip. Ideal for use with our economy soldering iron.

Description	Code	1+
Economy soldering iron stand	26102	£1.80



SOLDERING IRON STARTER KIT

A convenient Soldering Starter Kit consisting of a 30W Soldering Iron, Safety Stand, Desoldering Pump and Solder.

Description	Code	1+
Soldering Iron Starter Kit	26104	£11.85



SOLDER EXTRACTOR

The solder extractor allows incorrect solder joints to be removed. Molten solder is sucked into the extractor when the button is pressed.

Description	Code	1+	10+
Solder extractor	2623	£3.40	£3.00



DESOLDERING IRON / SOLDER SUCKER

This heated desoldering iron / sucker provides a simple solution to fixing soldered connections. Solder removal can be achieved with a single tool and operation, rather than having to use a sucker & a standard soldering iron, while also holding the board.

Description	Code	1+	10+
Desoldering iron / solder sucker	26108	£6.05	£5.95



SOLDER

- Lead free solder:** Available in 100g and 250g reels. (99.3% tin, 0.7% copper).
Lead solder (2633): 500g reel of rosin free, tin (63%) / lead (37%) solder.
Lead solder (2687): 100g reel of tin (60%) / lead (40%) solder. Contains rosin.

Description	Code	1+
Lead free solder - 250g reel	2608	£15.00
Solder, lead / tin - 500g reel	2633	£19.95
Lead free solder - 100g reel	2648	£5.99
Solder, lead / tin - 100g reel	2687	£4.95



HELPING HANDS

Make soldering easy with these helping hands. The two crocodile clips can be easily adjusted to hold PCBs or components whilst soldering takes place. A 60mm magnifying glass can also be positioned to make viewing small parts easier.

Description	Code	1+	10+
Helping hands	2622	£4.05	£3.35



PCB ERASER

A silicone rubber block containing ultrafine, non-metallic abrasives for cleaning copper clad boards prior to marking in readiness for etching. Size 40 x 30 x 20 mm.

Description	Code	1+
PCB eraser	2662	£4.95



SAFETY GLASSES

The wrap around lens on these safety glasses protects the eyes from exposure on the sides as well as from the front. The glasses comply with EN166-1995, the European standard for personal eye protection.

Description	Code	1+	10+
Safety glasses	2627	£2.25	£2.15



SOLDER MOP

These specially impregnated wicks draw up molten solder, leaving the joint clean and ready for re-soldering. Supplied on a handy plastic spools.

Economy solder mop: An effective economy solder mop. (Length 1.5m, braid width 2.5mm)

Quality solder mop: A premium quality solder mop. (Length 1.5m, braid width 2.7mm)



Description	Code	1+
Economy solder mop	2645	£1.00
Quality solder mop	2697	£4.55



MULTICORE TIP TINNER AND CLEANER

Provides fast, efficient cleaning and re-tinning of highly oxidized soldering iron tips, therefore extending the life of the tip.

Description	Code	1+
Multicore tip tinner and cleaner	2678	£7.45



SOLDERING IRON TIP CLEANER

This soldering iron tip cleaner is made of low abrasive brass shavings, meaning no water or wet sponges are necessary. Dimensions 82 x 30mm.

 Dimensions: 82 x 30mm

Description	Code	1+
Soldering iron tip cleaner	26107	£5.00



SOLDERING IRON SPONGE

A high quality soldering iron sponge perfect for replacing old, worn out sponges on your soldering iron stand. It can be easily cut down to suit any size or shape soldering iron stand.

 Dimensions: 140 x 100mm

Description	Code	1+
Soldering iron sponge	26106	£2.20



SCREWDRIVERS

General purpose terminal style screwdrivers. Available in a pack of 60 including stand, or as pack of 10. [Shaft length: 1.5"](#).

Description	Code	1+
Screwdrivers - pack of 10	2615-10	£3.40
Screwdrivers - pack of 60 with stand	2615-60	£19.00



PRECISION SCREWDRIVER SET

Set of 3 flat blade, and 3 cross point long shaft screwdrivers.

Description	Code	1+
Precision screwdrivers	2616	£4.15



AUTOMATIC WIRE STRIPPERS

These wire strippers hold and strip wire in one simple action. Exact trim lengths can be achieved with the integrated ruler. They can also be used to cut cable and adjusted to strip varying wire diameters.

Description	Code	1+	10+
Automatic wire strippers	2617	£4.90	£4.75



WIRE STRIPPERS

These light duty wire strippers with spring return will strip wire between 0.5mm to 4.0mm.

Description	Code	1+	5+
Wire strippers	2632	£4.00	£3.85



SIDE CUTTERS

Low cost side cutters with a flush cutting edge and return spring. Suitable for 0.2mm to 1.2mm diameter wires.

Description	Code	1+	5+
Side cutters	2634	£3.09	£2.89



2-IN-1 WIRE STRIPPER AND CUTTERS

These versatile cutters are a great addition to any tool box. They have the following features:

- Cut with one end, strip with the other.
- Stripper self adjusts to wire size.
- Strips soft copper (electronic) wire size 26 AWG to 14 AWG.
- Shaped plastic handles.

Description	Code	1+
2-in-1 wire stripper and cutters	2674	£6.60



ECONOMY CUTTERS & PLIERS

Both cutters and pliers are sprung loaded and at around 10 cm in length are perfect for light use, such as cutting and bending component leads.

Description	Code	1+	10+
Economy pliers	2619	£1.80	£1.50
Economy wire cutters	2620	£1.80	£1.50



SIDE CUTTING MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

Description	Code	1+	10+
Side cutting mini pliers - Length: 115mm	2668	£2.99	£2.69



LONG NOSE MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

Description	Code	1+	10+
Long nose mini pliers - Length: 130mm	2669	£2.99	£2.69



NEEDLE NOSE MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

Description	Code	1+	10+
Needle nose mini pliers - Length: 155mm	2671	£2.99	£2.69



12 PIECE ELECTRONIC SOLDERING AND REPAIR KIT

Everything you need to get started with electronics in one handy great value pack.

- Set includes:**
- Soldering iron with spare tip.
 - Desoldering pump, with spare nozzle and piston ring.
 - 4.5" long nose pliers.
 - 4.5" diagonal cutting pliers.
 - Voltage tester.
 - Screwdriver (+) 5x100mm.
 - Soldering iron holder.
 - Multimeter.
 - Lead free solder.

Description	Code	1+
12 piece electronic soldering & repair kit	26103	£19.85



6 PIECE NEEDLE FILE KIT

A 6 piece needle file kit with cushion grip. The pack contains the following files in a handy carry case: flat taper, half round, triangular, square, round and flat parallel.

Typical size: 3mm x 140mm

Description	Code	1+	10+
6 piece needle file kit with cushion grip	2698	£4.35	£3.85



ELECTRONIC DIGITAL CALLIPER

An LCD readout Digital Calliper. The display is switchable from metric to imperial. Resolution 0.01mm. A zero button enables reading to be reset to zero.

Description	Code	1+
Electronic digital calliper	2685	£19.99



50 WATT GLUE GUN

Pistol grip gun with precise trigger control fitted with 3 pin BS plug. Melting temperature: approx 90°C. Supplied with two glue sticks.

Description	Code	1+
50 watt glue gun	2676	£5.50



GLUE GUN STICKS - 12 PACK

For use with electric glue guns. Quick drying and strong bonding. For paper, wood, leather, ceramics, porcelain, glass.

Approx size: 11mm (diameter) x 100mm length.

Description	Code	1+
Glue gun sticks - 12 pack	2677	£1.65



INSULATION TAPE

This is high quality electrical grade self-adhesive insulating tape. The tape is 19mm wide and each reel is 20m long. The pack contains 6 reels (one each of the following colours: red, black, white, green, blue and yellow).

Description	Code	1+
Insulation tape pack	2618	£3.90



50MM WIDE DOUBLE SIDED TAPE - 33M ROLL

A roll of double sided tape, 50mm wide and 33m long. Ideal for use with our squeeze torch.

Description	Code	1+
50mm wide double sided tape	2673	£4.00



12 INCH STEEL RULE

Precision made stainless steel ruler with clear imperial and metric markings.

Description	Code	1+
12 inch steel rule	2679	£1.35



DM830D MULTIMETER

The DM830D Multimeter measures DC voltage, AC voltage, current, resistance, diodes, continuity & transistor testing. It has a rubberised protective holder.

Max DC / AC volts	600V
Max Current	10A
Max Resistance	2MΩ
Typical accuracy	± 1.2%

Description	Code	1+
DM830D multimeter	2604	£7.95



UNI-T DIGITAL AUTO RANGING MULTIMETER UT131A

The UNI-T UT131A Digital Auto-Ranging Multimeter is an ergonomic palm sized fully featured digital multimeter. Features; case, 2 probes, stand, battery included.

Max DC volts	250V
Max AC volts	250V
Max Resistance	40MΩ
Typical accuracy	± 0.5% to 4% (depending on reading type)

Description	Code	1+
UNI-T Digital Auto Ranging Multimeter UT131A	26117	£20.00



VARIABLE OUTPUT POWER SUPPLY

The UTP1303 is a 3A, 32V single-channel linear DC power supply with low ripple/noise, overload protection and constant voltage/current features.

Output variable: 0 to 32V, 3A.

Description	Code	1+
Variable output PSU	26115	£75.00

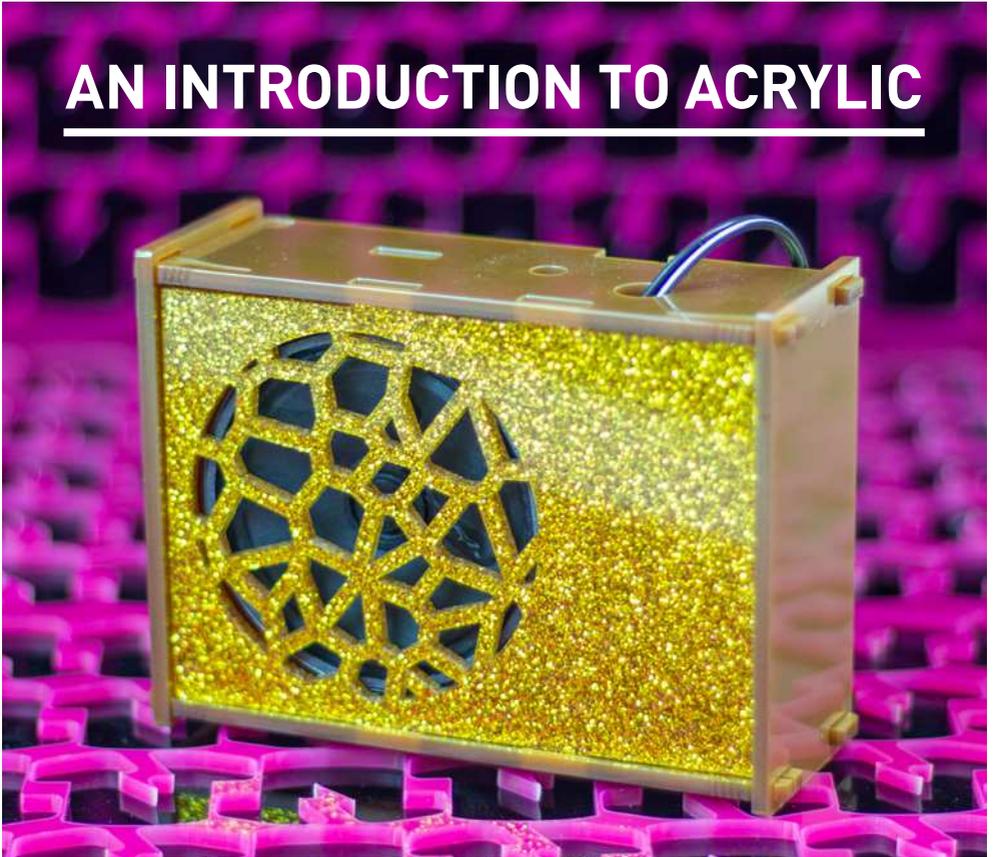
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Cork	228 - 229

AN INTRODUCTION TO ACRYLIC



We stock a wide range of acrylic sheets. Most of these are authentic Perspex® branded sheets which are available in a variety of thicknesses, sheet sizes, finishes and colours.

This choice of sheet sizes means there should be one to suit the bed sizes of the most popular laser cutters and CNC machines.

Perspex branded sheets are guaranteed for 10 years.

Looking for more information on how to cut, drill or machine acrylic sheets?

Why not take a look at our online guides which can be found at:



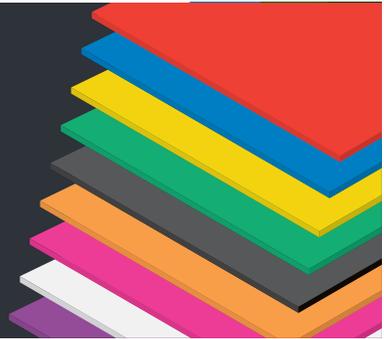
www.kitronik.co.uk/materialsguides

OPAQUE PERSPEX

Our full Perspex range **(with extra price breaks!)** can be found online:



www.kitronik.co.uk/perspex



OPAQUE (SOLID) 3MM PERSPEX® ACRYLIC SHEETS



This range of **opaque (solid) coloured cast PERSPEX®** branded sheets will allow no light to pass through making them ideal for a range of design applications. The bulk packs also give a simple way of ordering a range of colours, using a single order code. Laser cutter compatible: These cast sheets are ideal for using with a laser cutter or CNC machine.

Nominal

3MM RANGE	1000 x 600mm		800 x 450mm		600 x 400mm		600 x 300mm		297 x 210mm (A4 size)	
	Description	Code Sheet	Code Sheet	Code Sheet	Code Sheet	Code Sheet	Code Sheet	Code Sheet	Code Sheet	
Black	4305	£14.95	4355	£9.40	4365	£6.25	43275	£5.25	4705	£1.99
White	4308	£14.95	4358	£9.40	4368	£6.25	43278	£5.25	4708	£1.99
Red	4301	£14.95	4351	£9.40	4361	£6.25	43271	£5.25	4701	£1.99
Orange	4306	£14.95	4356	£9.40	4366	£6.25	43276	£5.25	4706	£1.99
Yellow	4303	£14.95	4353	£9.40	4363	£6.25	43273	£5.25	4703	£1.99
Green	4304	£14.95	4354	£9.40	4364	£6.25	43274	£5.25	4704	£1.99
Blue	4302	£14.95	4352	£9.40	4362	£6.25	43272	£5.25	4702	£1.99
Purple	4309	£14.95	4359	£9.40	4369	£6.25	43279	£5.25	4709	£1.99
Pink	4307	£14.95	4357	£9.40	4367	£6.25	43277	£5.25	4707	£1.99
Brown	43155	£14.95			43154	£6.25	43153	£5.25		
Pale Blue					43119	£6.25				
Pale Green					43120	£6.25				
Grey					43122	£6.25				
Bulk pack*	4300-SP	£134.00	4350-SP	£84.00	4360-SP	£49.15	43270-SP	£45.25	4700-SP	£17.50

* Includes one of each colour: Red, blue, yellow, green, black, orange, pink, white & purple

OPAQUE (SOLID) 5MM PERSPEX® ACRYLIC SHEETS

Nominal

Description	5MM RANGE		Nominal	
	Code	Sheet	Code	Sheet
Black Opaque (solid) 5mm Perspex® acrylic sheet	43205	£24.95	43265	£10.15
White Opaque (solid) 5mm Perspex® acrylic sheet	43208	£24.95	43268	£10.15
Red Opaque (solid) 5mm Perspex® acrylic sheet	43201	£24.95	43261	£10.15
Orange Opaque (solid) 5mm Perspex® acrylic sheet	43206	£24.95	43266	£10.15
Yellow Opaque (solid) 5mm Perspex® acrylic sheet	43203	£24.95	43263	£10.15
Green Opaque (solid) 5mm Perspex® acrylic sheet	43204	£24.95	43264	£10.15
Blue Opaque (solid) 5mm Perspex® acrylic sheet	43202	£24.95	43262	£10.15
Purple Opaque (solid) 5mm Perspex® acrylic sheet	43209	£24.95	43269	£10.15
Pink Opaque (solid) 5mm Perspex® acrylic sheet	43207	£24.95	43267	£10.15
Bulk pack Opaque (solid) 5mm Perspex® acrylic sheets (One of each colour)	43200-SP	£220.00	43260-SP	£90.00



Extra price breaks can be found online: www.kitronik.co.uk/perspex



Check www.kitronik.co.uk/delivery-info for materials delivery charges.

PERSPEX PROJECT EXAMPLES



www.kitronik.co.uk/blog/mono-amplifier-kit-balcarass-school

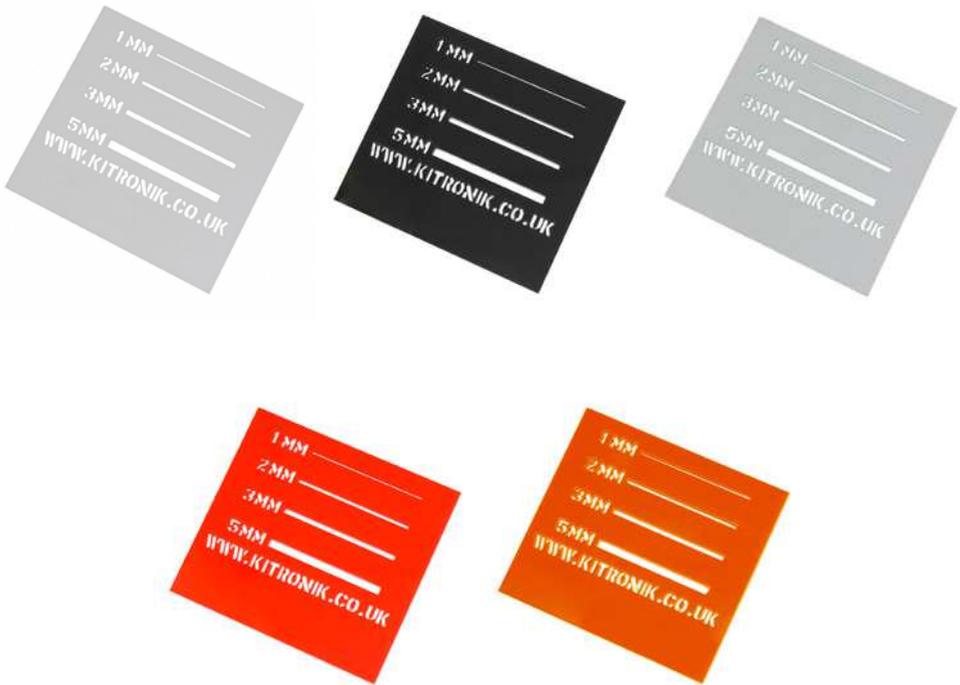


www.kitronik.co.uk/blog/fm-radio-kit-wisbech-grammar-school

KITRONIK VALUE RANGE ACRYLIC **NEW!**

This new range of acrylic has been sourced by Kitronik to help your budget go further! These products represent the start of the Kitronik Value Range where we aim to provide the best value materials in the UK market. This is a good quality cast acrylic, which cuts similarly to branded materials but is available at a much lower price!

Where there are trade offs is that colours are not as consistent between batches, so for commercial products we would recommend picking the name brand product. However for the majority of uses this value range acrylic is perfect.



Check www.kitronik.co.uk/delivery-info for materials delivery charges.



All sheet sizes 600 x 400mm



www.kitronik.co.uk/value

Description	Code	1+	10+	100+
3mm White Acrylic Sheet (Cast)	43187	£4.55	£4.25	£4.10
3mm Black Acrylic Sheet (Cast)	43186	£4.55	£4.25	£4.10
3mm Clear Acrylic Sheet (Cast)	43185	£4.55	£4.25	£4.10
3mm Red Acrylic Sheet (Cast)	43188	£4.55	£4.25	£4.10
3mm Orange Acrylic Sheet (Cast)	43192	£4.55	£4.25	£4.10
3mm Yellow Acrylic Sheet (Cast)	43191	£4.55	£4.25	£4.10
3mm Green Acrylic Sheet (Cast)	43190	£4.55	£4.25	£4.10
3mm Blue Acrylic Sheet (Cast)	43189	£4.55	£4.25	£4.10

MAKE YOUR BUDGET GO...

FURTHER!

For our full range of value acrylic, visit:



www.kitronik.co.uk/value

A KITRONIK **FREE** RESOURCE

USING LASER MATERIALS

With the wide range of laser materials available at Kitronik, we regularly get asked questions about the materials and the best way to use them. We have created a guide on using laser materials, which covers both Perspex acrylic sheets and laser wood, including MDF, laminated MDF and Plywood, aiming to answer those questions.

The guide includes sections on:

- SPEED & POWER
- VARIATION IN MATERIALS
- LASER POWER & CUT DEPTH
- CONSISTENT CUTTING
- SETTING UP A JOB
- CHOOSING THE RIGHT BED
- DETECTING ISSUES EARLY
- EVERY LASER IS DIFFERENT



The full Laser Materials guide can be viewed online at:

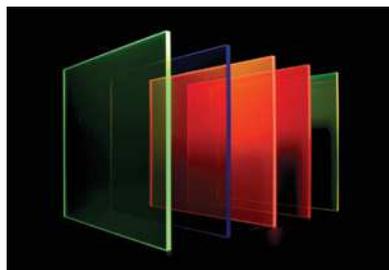


www.kitronik.co.uk/laserguide

FLUORESCENT PERSPEX® ACRYLIC SHEETS

These PERSPEX® branded fluorescent sheets have an edge that appears to glow under ambient light which can be used to create very striking designs.

These sheets are all manufactured using the cast method and are guaranteed for 10 years.



FLUORESCENT 3MM PERSPEX® ACRYLIC SHEETS

3MM RANGE	Nominal							
	1000 x 600 mm			600 x 400 mm			A4 or 300 x 200 mm	
Description	Code	1+	10+	Code	1+	10+	Code	1+
Mars red	4331	£15.65	£15.45	4381	£6.65	£6.25	4711	£2.49
Lava orange	4332	£15.65	£15.45	4382	£6.65	£6.25	4712	£2.49
Hellios yellow	4333	£15.65	£15.45	4383	£6.65	£6.25	4713	£2.49
Acid green	4334	£15.65	£15.45	4384	£6.65	£6.25	4714	£2.49
Neptune blue	4335	£15.65	£15.45	4385	£6.65	£6.25	4715	£2.49
Bulk pack (One of each colour)	4330-FP	£77.50		4380-FP	£33.00		4710-FP	£12.00

FLUORESCENT 5MM PERSPEX® ACRYLIC SHEETS

5MM RANGE	Nominal	
	600 x 400 mm	
Description	Code	Sheet
Mars red	43281	£11.40
Lava orange	43282	£11.40
Hellios yellow	43283	£11.40
Acid green	43284	£11.40
Neptune blue	43285	£11.40
Bulk pack (One of each colour)	43280-FP	£56.00



CLEAR PERSPEX®

Clear PERSPEX® sheets have an exceptional light transmission characteristics. They can easily be CNC or laser cut. The 2mm is extruded, there are both extruded and cast versions of 3mm, and the 5mm is cast.

Description	Code	Sheet	Nominal			
			1000 x 600 mm	600 x 400 mm	600 x 300 mm	
1mm Extruded (595 x 400mm)	NEW!			43168	£10.80	
2mm Extruded	NEW!	4348	£8.80	4346	£3.55	43169 £4.25
3mm Extruded				43210	£5.30	
2mm Cast	NEW!			43171	£5.10	43170 £4.25
3mm Cast	NEW!	4340	£13.35	4345	£5.60	43172 £5.20
4mm Cast	NEW!	43175	£18.00	43174	£7.35	43173 £6.10
5mm Cast	NEW!	4349	£22.20	4347	£9.15	4336 £7.75



GLASS LOOK CLEAR PERSPEX® SHEET

Glass Look Clear Transparent Perspex 3mm thickness. Sizes: 600mm by 400mm & 400mm by 300mm. Sheets will allow light to pass through clearly. Perspex colour ref 6T21.

Description	Code	1+	10+
Glass look Perspex - 3mm x 600mm x 400mm	43123	£6.25	£6.00
Glass look Perspex - 3mm x 400mm x 300mm	43151	£3.15	£3.05



GREENCAST ACRYLIC SHEETS

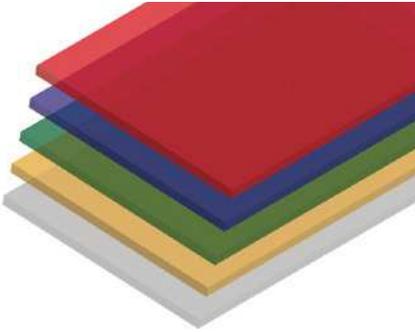
NEW!

These 100% recycled premium quality Greencast Acrylic Sheets are made from 100% recycled MMA, making them extremely environmentally friendly. It looks, performs, fabricates and lasts as long as standard virgin acrylics. It is also free from volatile organic compounds and hydro-fluorocarbon. The protective film is PVC free and safe for laser cutting.



Description	Code	1+	10+
Clear Greencast Acrylic - 3mm x 600mm x 400mm	43121	£5.95	£5.60
White Greencast Acrylic - 3mm x 600mm x 400mm	43196	£7.30	£6.95
Black Greencast Acrylic - 3mm x 600mm x 400mm	43197	£7.80	£7.45

TRANSPARENT CAST 3MM PERSPEX® ACRYLIC SHEETS



Transparent sheets will allow light to pass through clearly, enabling objects to be distinguished through the material.

Laser cutter compatible

These cast sheets are ideal for using with a laser cutter or CNC machine and are available in a range of sheet sizes to suit your machine.

Nominal

1000 x 600 mm

600 x 400 mm

Description	Code	1000 x 600 mm		600 x 400 mm		
		1+	10+	Code	1+	10+
Red	4321	£15.15	£14.90	43221	£6.25	£6.00
Blue	4322	£15.15	£14.90	43222	£6.25	£6.00
Green	4323	£15.15	£14.90	43223	£6.25	£6.00
Amber	4324	£15.15	£14.90	43224	£6.25	£6.00
Neutral (grey)	4325	£15.15	£14.90	43225	£6.25	£6.00
Bulk pack (One of each colour)	4320-TP	£75.00		43220-TP	£30.50	

VISIT OUR WEBSITE FOR
MORE **FREE GUIDES** ON

CUTTING & WORKING WITH PERSPEX



www.kitronik.co.uk/materialsguides



There is a once per order delivery charge for some of our material sheets. Check www.kitronik.co.uk/delivery-info for relevant delivery charges.

A KITRONIK **FREE** RESOURCE

BUILDING YOUR OWN PERSPEX BOX



This is a basic laser cutting guide detailing how to make a simple Perspex Box. It is the first in a series of resources designed as an introduction to using a laser cutter.

Sometimes, the best way to house a project is a simple box. There are some great online tools to help you design your box, but for the sake of doing it all in one place, we chose to use a free program to design ours.



www.kitronik.co.uk/laser-box

PERSPEX STAG – THE JUDD SCHOOL



A GCSE student from The Judd School in Kent has come up with a very effective way of showing one of the many ways Perspex is used in Schools in the form of a 3D stag trophy head.

This stag trophy head was designed as a GCSE project which we think you'll agree looks stunning. It features Clear Frosted Perspex that was laser cut. It has been designed meticulously and is lit up with a strip of LEDs underneath to highlight the outline of the sculpture.

FROSTED 3MM PERSPEX® ACRYLIC SHEETS

These sheets have a double sided matt finish which gives an effect that is similar to sand blasted or etched glass. All of these sheets let light through, but the midnight black and moonlight white ones are opaque.


1000 x 600 mm
600 x 400 mm

Description	Code	Sheet	Code	Sheet
Frosted white	4392	£16.95	4391	£6.95
Chilli red	43107	£17.40	43112	£7.20
Lime zest	43117	£17.40	43118	£7.20
Sapphire blue	43109	£17.40	43114	£7.20
Midnight black	43139	£17.40	43137	£7.20
Moonlight white	43149	£17.40	43138	£7.20
Citrus yellow	43106	£17.40	43111	£7.20
Grey	43110	£17.40	43115	£7.20



Check www.kitronik.co.uk/delivery-info for materials delivery charges.

3MM METALLIC PERSPEX® SHEETS

NEW!

Metallic finish Perspex acrylic sheets. The gorgeous metallic finish makes them ideal for luxurious looking applications. Both sides of the sheets have a high gloss finish.

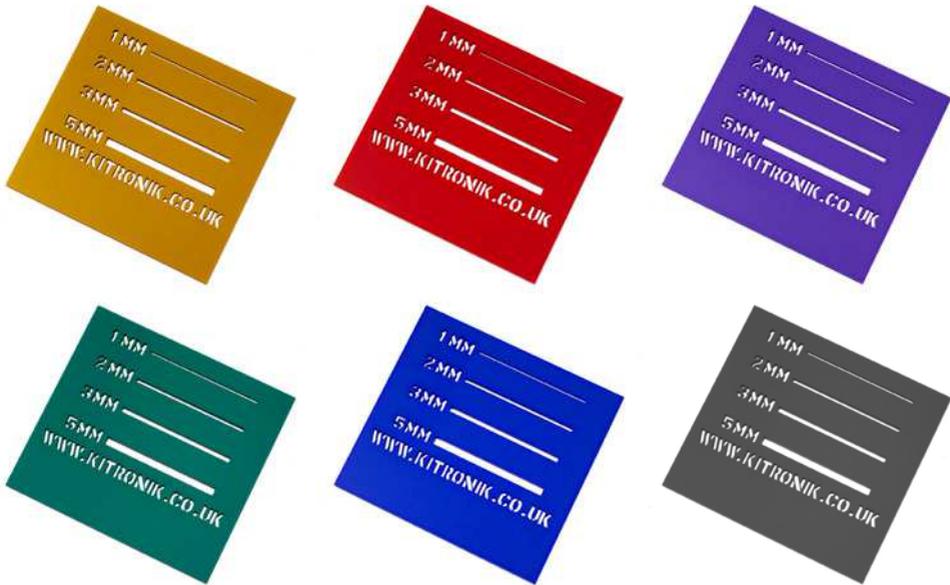

1000 x 500 mm
600 x 400 mm
600 x 300 mm
300 x 200 mm

Description	Code	Sheet	Code	Sheet	Code	Sheet	Code	Sheet
Silver	43102	£32.16	4337	£17.60	4338	£11.25	4339	£3.70
Gold	43103	£32.16	4317	£17.60	4316	£11.25	43184	£3.70

3MM PERSPEX® ROYALS ACRYLIC SHEETS

NEW!

Be inspired by these Perspex Royals Sheets, measuring 3mm x 600mm x 400mm. They have a luxury silk texture and metallic shimmer, with a chromatic effect, producing a colour shift across the surface as the viewing angle changes. They were specifically developed with the retail industry in mind to add luxury to product displays looking for that extra special touch.



It has a single sided surface effect on the showface. The beauty of the Perspex Royals effect is due to the nature of the pigments used reflecting light in a number of directions. Some variation in natural or perceived colour will occur. This natural variation will also provide a directional effect. Adjoining samples should therefore be cut in the same plane.

All sheet sizes 600 x 400mm

 www.kitronik.co.uk/perspexroyals

Description	Code	1+
3mm Queen Marie Gold	4387	£12.45
3mm King Henry Red	4388	£12.45
3mm King George Purple	4389	£12.45
3mm Queen Isabella Green	43193	£12.45
3mm Queen Elizabeth Blue	4390	£12.45
3mm King Louis Silver	4386	£12.45



MIRROR ACRYLIC PERSPEX® SHEETS

Mirrored acrylic sheets make an excellent alternative to glass mirrors. Shatter proof, mar-resistant and stronger than glass, they can be used in a wide range of products and applications. These sheets are made from extruded acrylic and the mirror effect is applied to one face. They can be machined and laser cut like normal acrylic sheets. As acrylic mirrors are more flexible than glass they must be fixed to a flat wall/surface. If you are fitting it to a wall which is not flat, it is best to fit it first to something rigid such as a piece of MDF.

Description	Code	1+	10+
Mirror extruded perspex sheet – 3mm x 800mm x 600mm	43148	£20.25	£19.85
Mirror extruded perspex sheet – 3mm x 600mm x 400mm	4393	£10.45	£10.15
Mirror extruded perspex sheet – 3mm x 400mm x 300mm	43152	£5.25	£5.05

COLOURED MIRRORED ACRYLIC

We stock a vibrant range of coloured acrylic mirror sheet from Plaskolite. Made from extruded acrylic sheet, each mirror is protected by the industry's toughest, most durable backing. All coloured acrylic mirror is covered by a protective laserable film.



www.kitronik.co.uk/mirror



Description	Code	1+	10+
Red mirrored acrylic sheet – 3mm x 600mm x 400mm	43132	£20.90	£20.30
Purple mirrored acrylic sheet – 3mm x 600mm x 400mm	43133	£20.90	£20.30
Gold mirrored acrylic sheet – 3mm x 600mm x 400mm	43134	£20.90	£20.30
Bronze mirrored acrylic sheet – 3mm x 600mm x 400mm	43135	£20.90	£20.30
Green mirrored acrylic sheet – 3mm x 600mm x 400mm	43136	£20.90	£20.30
Rose Gold mirrored acrylic sheet – 3mm x 600mm x 400mm	NEW! 4319	£19.50	£19.00

KITRONIK GLITTER RANGE ACRYLIC SHEETS

NEW!

Kitronik Glitter Acrylic is a stunning and simple product. High quality cast acrylic with beautiful flecks of coloured glitter running through them. Perfect for making your projects stand out, simple designs can really shine with this sparkling product.



- ^ Close-up of the acrylic's glitter effect (43158).
- < An example of a laser cut project made using one of the glitter sheets.



All sheet sizes 600 x 400mm

Description	Code	1+
3mm Red Glitter Sheet (Cast)	43158	£14.95
3mm Orange Glitter Sheet (Cast)	43160	£14.95
3mm Green Glitter Sheet (Cast)	43161	£14.95
3mm Light Blue Glitter Sheet (Cast)	43162	£14.95
3mm Hot Pink Glitter Sheet (Cast)	43164	£14.95
3mm Silver Glitter Sheet (Cast)	43166	£14.95
3mm Gold Glitter Sheet (Cast)	43167	£14.95



GLITTER ACRYLIC PROJECT IDEAS

Combining Kitronik Glitter Acrylic with other materials and lighting can make really impressive objects where just a little material can make a big impact and give an excellent level of finish.

Find more examples on our blog: www.kitronik.co.uk/pumpkin



ACRYLIC BUBBLE ROD - 495MM LENGTH

Bubble rod is a really good material to use in ornamental lighting projects. When an LED is placed at the end of the rod the whole rod is illuminated and the bubbles contained within the rod give it a great look. Whilst any bright LEDs can be used, colour changing LEDs give a constantly changing feature.

The bubble rod is available in a choice of sizes. All are 495mm in length.

Diameter	Code	1+
6mm	4901	£0.75
10mm	4902	£1.25
15mm	4903	£1.65



ACRYLIC ROD - 495MM LENGTH

The acrylic rod is a solid acrylic cylinder, which can be illuminated by LEDs. The rod is available in a choice of sizes. All are 495mm in length.

Diameter	Code	1+
6mm	4904	£0.70
10mm	4905	£0.95
15mm	4906	£1.65



ACRYLIC TUBE - 495MM LENGTH

This hollow tube is available in two sizes. Both are 495mm length.

The 8mm outer diameter has a 1mm wall thickness and a 6mm internal diameter.

The 16mm outer diameter has a 2mm wall thickness and a 12mm internal diameter.

Diameter	Code	1+
8mm	4907	£0.70
16mm	4908	£1.20

LOOKING FOR INSPIRATION?

CREATE YOUR OWN SIGNS WITH THESE NEW SHEETS



Get more project inspiration: www.kitronik.co.uk/laminate-examples

LASER ENGRAVING LAMINATE SHEETS **NEW!**

These 1.5mm Laser Engraving Laminate sheets have a solid base layer, with a contrasting layer on the surface. These materials cut and engrave well on a laser cutter and when engraved, the top layer gives way to the contrasting colour underneath to decorative effect.



All sheet sizes 600 x 400mm

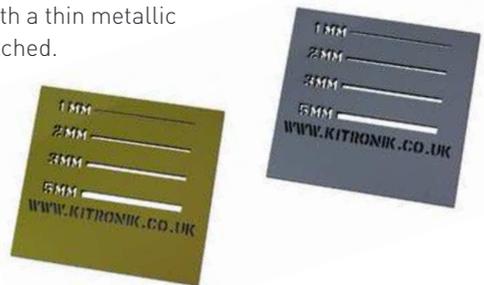
www.kitronik.co.uk/laminates

Description	Code	1+
Black on White Laser Engraving Laminate sheet	43211	£11.75
White on Black Laser Engraving Laminate sheet	43212	£11.75
Red on White Laser Engraving Laminate sheet	43213	£11.75
Blue on White Laser Engraving Laminate sheet	43214	£11.75
Yellow on Black Laser Engraving Laminate sheet	43215	£11.75
Gold on Black Laser Engraving Laminate sheet	43216	£11.75

PERSPEX® DUO ACRYLIC SHEETS **NEW!**

Duo from Perspex is a black sheet of acrylic with a thin metallic layer, allowing the black to be exposed when etched.

Perspex Duo offers two beautiful effects in just one product - a metallic sparkle that contrasts elegantly with a rich black. The metallic pigment gives it a lovely lustrous sheen whose vibrancy is further enhanced under strong lighting.



www.kitronik.co.uk/4329

www.kitronik.co.uk/4330

All sheet sizes 600 x 400mm

Description	Code	1+
Gold & Black Perspex Duo Acrylic Sheet 3mm	4329	£10.15
Silver & Black Perspex Duo Acrylic Sheet 3mm	4330	£10.15

DRY ERASE & CHALKBOARD ACRYLIC SHEETS

NEW!

These new laser acrylic sheets can be laser cut and UV printed to create custom whiteboards and blackboards for the home, workplace or in the classroom!



WHITE LASER DRY ERASE BOARD

Create custom whiteboards with these white laser, dry erase, acrylic boards measuring 1.5mm x 600mm x 400mm. Can be worked & thermoformed like regular acrylics.



www.kitronik.co.uk/43194

Description	Code	1+
White Laser Dry Erase Acrylic Board	43194	£9.50

CHALK BOARD EFFECT LASER ACRYLIC SHEET

Create custom black boards with these chalk board effect laser acrylic sheets measuring 1.5mm x 600mm x 400mm. Can be worked & thermoformed like regular acrylics.



www.kitronik.co.uk/43195

Description	Code	1+
Chalk Board Effect Laser Acrylic Sheet	43195	£18.00

HIPS (HIGH IMPACT POLYSTYRENE SHEETS)

Our range of High Impact Polystyrene Sheets (HIPS) is available in seven different colours and in two different thicknesses (1mm and 1.5mm). Sheet sizes are 457mm by 254mm.

HIPS are a highly versatile product that have many uses and can be worked easily with standard workshop tools. They are very tough, rigid and highly resistant to impact, making them a very hard wearing material. The sheets can easily be routed, sawn, punched, drilled, guillotined, thermoformed or vacuum formed.



www.kitronik.co.uk/hips

Sheet size

Description	1mm x 457mm x 254mm		1.5mm x 457mm x 254mm			
	Code	1+	50+	Code	1+	50+
Black	5701	£0.80	£0.77	5711	£1.20	£1.15
White	5702	£0.80	£0.77	5712	£1.20	£1.15
Red	5703	£0.90	£0.85	5713	£1.40	£1.30
Blue	5704	£0.90	£0.85	5714	£1.40	£1.30
Green	5705	£0.90	£0.85	5715	£1.40	£1.30
Yellow	5706	£0.90	£0.85	5716	£1.40	£1.30
Purple	5707	£0.90	£0.85	5717	£1.40	£1.30
Bulk pack (One of each colour)	5700-SP	£5.85		5710-SP	£8.70	



Check www.kitronik.co.uk/delivery-info for materials delivery charges.

GREY LASER COMPATIBLE RUBBER SHEETS

These 2.3mm Grey Laser Compatible Rubber A4 sheets are highly versatile and are the perfect choice for using with a laser cutter. When cut it produces no harmful gasses and it is very low odour (unlike most types of rubber). It can be engraved and cut with any type of CO2 laser and offers outstanding engraving and impression quality.

Although it has a number of potential uses, its high resistance to alcohol and water-based inks makes it the ideal choice for making custom rubber stamps. Other possible uses include making custom seals, rubber feet, protective strips and even durable external decorations for projects.



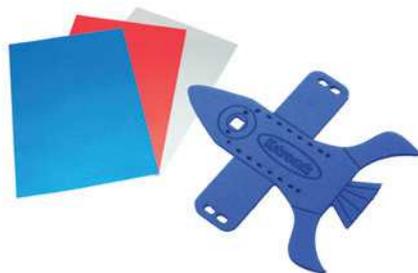
www.kitronik.co.uk/5510

Description	Code	1+	10+
2.3mm Grey Laser Compatible Rubber – A4 sheet	5510	£11.95	£10.95

LASER CRAFT FOAM SHEETS

This versatile 2mm (nominal) Polyethylene craft foam is ideal for a wide range of D&T applications. It is supplied in a convenient 600mm x 400mm sheet size which makes it ideal for use on most laser cutting machines. The craft foam is very easy to laser cut and etch and produces nice clean edges (see example picture).

The foam can also be laminated, glued and thermoformed. It has a uniform structure, is high density, anti-static, light weight and has good thermal and acoustic insulation properties. It has very low shrinkage and is resistant to temperatures between -60 and +90 Celsius.



Example of the foam, laser cut & etched ^

www.kitronik.co.uk/foam

Description	Code	1+	10+
Red Polyethylene Craft Foam Sheet – 2mm x 600mm x 400mm	5501	£1.95	£1.80
White Polyethylene Craft Foam Sheet – 2mm x 600mm x 400mm	5502	£1.95	£1.80
Blue Polyethylene Craft Foam Sheet – 2mm x 600mm x 400mm	5506	£1.95	£1.80

LARGE PVC FLEXIBLE SHEET



This PVC sheet is ¼mm thick. The frosted finish on the plastic makes a good diffuser for lighting projects. The material can be easily cut into smaller pieces to suit various projects.

Sheet size: 457 x 350mm.

Description	Code	1+	10+
Large PVC flexible sheet - 457 x 350mm	43116	£2.65	£2.25

PEN POT ENCLOSURE SET



The pen pot enclosure is perfect starting point for a lamp design or for a graphics project. The enclosure consists of a plastic base plus cap and a die cut piece of frosted plastic that 'locks' into a tube shape. The frosted plastic makes a good diffuser for lighting projects.

Diameter: 80mm. Height: 110mm.



Description	Code	1+	10+	100+
Pen pot base, cap & PVC sheet set	4343	£1.50	£1.20	£1.00
Pen pot base & cap (without PVC sheet)	4343END	£0.65		£0.60



There is a **once per order delivery charge** on all acrylic, cork, Styrofoam, polypropylene, plywood and MDF sheets (including veneered plywood and MDF). In most UK locations this is £6.50, see the front of the catalogue for more information. Standard delivery applies to A4 sized sheets.

NEED INSPIRATION? SEE OUR ONLINE GALLERY SHOWING STUDENTS' WORK



www.kitronik.co.uk/gallery/picture-gallery

POLYPROPYLENE SHEETS

Our Polypropylene Sheets are suitable for a wide range of design applications. They are available in a range of opaque colours and also in transparent with either a frost or translucent clear finish. The thin gauges make the sheets flexible and therefore ideal for products requiring a curved finish.

Working with this material

These sheets can be cut safely on a laser cutter (please note the edges will be slightly 'burred' and do not appear 'polished' like Perspex) and unlike PVC they do not create any chlorine gas. The sheets can also be cut using a sharp knife. You can crease the material using a cold or hot creasing technique. The resulting 'hinges' can be folded many times without the material breaking.



www.kitronik.co.uk/polypropylene

Description	Code	1+	10+	50+	100+
0.8mm White, fine sand/sand finish, 1100mm x 650mm	43124	£3.60		£3.30	
0.8mm Yellow, fine sand/sand finish, 1100mm x 650mm	43125	£3.60		£3.30	
0.8mm Red, fine sand/sand finish, 1100mm x 650mm	43126	£3.60		£3.30	
0.8mm Aqua Blue, fine sand/sand finish, 1100mm x 650mm	43127	£3.60		£3.30	
0.8mm Green, fine sand/sand finish, 1100mm x 650mm	43128	£3.60		£3.30	
0.8mm Black, fine sand/sand finish, 1100mm x 650mm	43129	£3.60		£3.30	
0.8mm Translucent, gloss finish, 1100mm x 650mm	43130	£3.60		£3.30	
0.73mm Frosted, fine sand/sand finish, 1100mm x 650mm	43131	£3.60		£3.30	
0.5mm Frosted, 1100mm x 650mm	43140	£2.30		£2.10	
0.5mm Black, 1050mm x 750mm	43141	£2.30		£2.10	
0.5mm White, 1020mm x 720mm	43142	£2.30		£2.10	
0.5mm Red, 1050mm x 750mm	43144	£2.30		£2.10	
0.5mm Blue, 1050mm x 750mm	43145	£2.30		£2.10	
0.5mm Green, 1050mm x 750mm	43146	£2.30		£2.10	
0.5mm Yellow, 1050mm x 750mm	43147	£2.30		£2.10	
0.5mm Black, 500mm x 350mm	NEW!	43176	£1.50	£0.85	£0.65
0.5mm Frosted, 500mm x 350mm	NEW!	43177	£1.50	£0.85	£0.65
0.5mm Navy Blue, 500mm x 350mm	NEW!	43178	£1.50	£0.85	£0.65
0.5mm White, 500mm x 350mm	NEW!	43179	£1.50	£0.85	£0.65
0.5mm Red, 500mm x 350mm	NEW!	43180	£1.50	£0.85	£0.65
0.5mm Yellow, 500mm x 350mm	NEW!	43181	£1.50	£0.85	£0.65
0.5mm Royal Blue, 500mm x 350mm	NEW!	43182	£1.50	£0.85	£0.65
0.5mm Green, 500mm x 350mm	NEW!	43183	£1.50	£0.85	£0.65

BLUE STYROFOAM SHEETS

These highly versatile Craft Foam Styrofoam Sheets measure 25mm x 600mm x 600mm and 50mm x 600mm x 600mm. Though rigid and strong, these Craft Foam Styrofoam Sheets are very lightweight and can easily be cut and shaped, making them popular with professionals and hobbyists alike.



Styrofoam has a very high weight to strength ratio and has high mechanical strength in compression, tension bending and shear whilst still being very light. It is also an excellent thermal insulator and resistant to water and vapour. The ease with which these sheets can be shaped makes them ideal for model making, building fast prototypes, planning architectural structures, children's art and making moulds for vacuum forming, to name but a few.

As well as basic cutting and shaping these sheets can be further shaped by sawing, drilling or routing and once it has been shaped, you can easily apply a professional finish with resins and paints.



^ Example project completed with the blue craft foam Styrofoam sheets.

i Ordering these items will incur the **once per order delivery charge** for materials (in most UK locations this is £6.50).

Visit www.kitronik.co.uk/delivery-info for more information.

www.kitronik.co.uk/craftfoam

Description	Code	1+
Blue craft foam Styrofoam sheet – 25mm x 600mm x 600mm	5507	£6.25
Blue craft foam Styrofoam sheet – 50mm x 600mm x 600mm	5508	£11.00

i There is a once per order delivery charge for some of our material sheets. Check www.kitronik.co.uk/delivery-info for relevant delivery charges.

SMART MATERIALS – THERMOCHROMIC LIQUID CRYSTAL

NEW!

These heat sensitive products make for an excellent demonstration of Smart Materials. We offer a wide range of products to suit all budgets with products that you can use for simple experiments or far more complex ones measuring thermal conductivity of materials.

Each of these sheets contains Thermochromic Liquid Crystals which change colour in reaction to heat, due to the way their molecules twist and interact with light in different ways.

THERMOMETER STRIPS - 12 TO 32 DEGREES

76mm x 6mm Temperature Strips. An economical way to teach smart materials with examples, these thermometer strips are perfect for the job.

Description	Code	1+	10+	100+
Thermochromic Thermometer Strips	2064	£0.99	£0.89	£0.49



LIQUID LEVEL INDICATOR STRIP

Flexible, durable and adhesive-backed Thermochromic strip that changes colour depending on temperature differential between liquid and gases within containers.

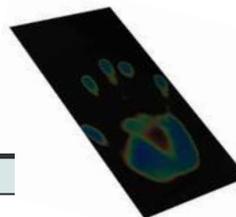
Description	Code	1+	10+	100+
Thermochromic Temperature Indicator	2066	£3.45	£2.95	£2.45



THERMOCHROMIC SHEET - 300 x 150MM

These Thermochromic Sheets, 300mm x 150mm provide an exciting way to see thermal mapping changes through colour. They are supplied with an adhesive backing. Can be cut with scissors.

Description	Code	1+	10+	100+
Thermochromic Sheet - 300 x 150mm	2065	£8.45	£7.75	£7.05



THERMAL CONDUCTIVITY BAR

The thermal conductivity set comprises four metal bars that can be used to demonstrate the differences in thermal conductivity between the different materials.

Description	Code	1+	5+
Thermosmart Thermal Conductivity Bar	2067	£26.95	£24.95



SMART MATERIALS – POLYMORPH THERMOSET PLASTIC

NEW!


Polymorph is a very popular smart material that has Educational and practical uses. It is a thermoplastic with a low melting temperature and a long working time. Students and crafters can create a huge range of useful products, using it for decorative and practical items.

It is a reusable thermoplastic polymer with a low melting point. The pellets fuse together, soften and turn transparent when heated to over 62°C allowing users to easily shape the polymer by hand! It hardens to a solid, white, non-brittle, strong material that truly has unlimited possibilities. It has no shelf-life and is fully biodegradable.

Can be coloured with colouring pigments.



Description	Code	1+	10+	100+
Smart Materials Range - Polymorph, 100g Pack	4376	£3.99	£3.69	£2.99
Smart Materials Range - Polymorph, 500g Pack	4378	£12.95	£11.75	£9.95
Smart Materials Range - Polymorph, 8 Pigment Pack	42386	£9.95	£8.95	£7.45



< You can see the video (left) and view full information for this product at the following link:

www.kitronik.co.uk/4376

WE ARE COMMITTED TO SUSTAINABILITY

Kitronik is committed to providing as many sustainable products as possible. Where possible Kitronik aim to source wood products that are FSC or PEFC approved from a supplier who is a certified 'Responsible Timber Purchaser'. FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) are both schemes that promote sustainable forest management.

The schemes focus on growing and harvesting timber sustainably, providing valuable income and work opportunities for local workers, whilst conserving the forest and natural habitats for future generations.

Look out for these icons:



Find out more about the FSC an PEFC schemes online:



www.kitronik.co.uk/fsc



www.kitronik.co.uk/pefc

PLYWOOD

A popular choice due to its sturdy construction, Plywood was one of the first composite materials used in construction, and is a great example of a manufactured timber product.



Our Plywoods are from sustainable sources and provide an excellent case study for Sources and Origins. All of our plywood uses interior glue, making them ideal for laser cutting.

Description		Code	1+	10+	100+	250+
3mm Poplar, 300mm x 200mm		3272	£0.70	£0.60	£0.55	£0.50
3mm Birch, 300mm x 200mm		3271	£0.80	£0.75	£0.70	£0.68
6mm Birch, 300mm x 200mm		3281	£0.95	£0.85	£0.70	£0.60
3mm Poplar, 600mm x 300mm		3224	£2.00	£1.85	£1.60	£1.50
3mm Birch, 600mm x 300mm		3244	£2.40	£2.20	£2.10	£2.00
4mm Poplar, 600mm x 300mm		3267	£2.35	£2.15	£1.90	£1.85
6mm Poplar, 600mm x 300mm		3225	£3.00	£2.80	£2.45	£2.35
3mm Economy Birch, 600mm x 400mm	NEW!	32100	£2.20	£2.10	£1.90	£1.75
3mm Poplar, 600mm x 400mm		3209	£2.60	£2.40	£2.15	£2.05
3mm Birch, 600mm x 400mm		3201	£2.95	£2.85	£2.75	£2.65
4mm Poplar, 600mm x 400mm		3261	£3.30	£3.05	£2.70	£2.60
4mm Birch, 600mm x 400mm		3286	£3.35	£3.25	£3.15	£3.05
6mm Birch, 600mm x 400mm		3202	£3.75	£3.55	£3.45	£3.35
6mm Poplar, 600mm x 400mm		3210	£3.95	£3.75	£3.20	£3.05
9mm Poplar, 600mm x 400mm		3260	£5.90	£5.65	£4.80	£4.65
3mm Birch, 800mm x 600mm		3274	£4.70	£4.35	£4.15	£3.85
3mm Poplar, 800mm x 600mm	NEW!	3217	£4.95	£4.55	£4.25	£3.95
6mm Poplar, 800mm x 600mm		3279	£7.80	£7.50	£6.70	£6.20

Note: All effort is made to keep these sheets flat though some sheets may have slight bends or curves. These should be strapped/taped to the laser bed before cutting. Delivery charges may apply.



For more size options and grading info, see www.kitronik.co.uk/plywood

BR GRADE PLYWOOD SHEETS

These are high quality Birch Plywood sheets produced in Finland. The surface of the material is sanded to a smoother finish than that of most plywoods. The 0.8mm, 1.5mm, 2.0mm and 3.0mm versions can be bent (the thinner options are easier to bend) and flexed to create curved designs. This is BR 'veneer' grade Birch Plywood. This is similar to B grade material, showing the natural look of the wood (small knots are allowed) and will show natural colour variations. Suitable for laser cutting as they use an interior glue.



Description		Code	1+	10+	100+	250+
0.8mm BR Grade - 400mm x 300mm		3275	£3.85	£3.55	£3.35	£3.15
0.8mm BR Grade - 600mm x 300mm		3276	£5.80	£5.25	£5.05	£4.75
0.8mm BR Grade - 600mm x 400mm		3213	£7.25	£6.85	£6.25	£5.95
1.5mm BR Grade - 400mm x 300mm		3277	£3.60	£3.20	£3.10	£2.95
1.5mm BR Grade - 600mm x 300mm		3278	£5.25	£4.80	£4.60	£4.40
1.5mm BR Grade - 600mm x 400mm		3214	£6.70	£6.35	£5.95	£5.55
2mm BR Grade - 600mm x 400mm		3215	£9.15	£8.45	£7.95	£7.55
3mm BR Grade - 600mm x 400mm		3223	£10.65	£9.80	£9.30	£9.10

CEIBA THIN PLYWOOD SHEETS

These high quality 2mm Ceiba Plywood sheets are suitable for a wide range of applications and are particularly suited to laser cutting. Like our fantastic Poplar plywood sheets, Ceiba is very fast growing and has a much lower density than Birch, meaning that it can be **easily laser cut** at lower power settings.



Description		Code	1+	10+	100+	250+
2mm Ceiba Plywood - 600mm x 400mm		3262	£2.90	£2.70	£2.45	£2.30
2mm Ceiba Plywood - 800mm x 600mm	 	3292	£4.80	£4.65	£4.50	£4.45

HOW IS POPLAR DIFFERENT TO BIRCH PLYWOOD?



www.kitronik.co.uk/birch-poplar



BIRCH
LASER
PLYWOOD

POPLAR
LASER
PLYWOOD -
CLEANER
CUTTING!

A KITRONIK **FREE** RESOURCE

PLYWOOD GRADING INFORMATION

We have been working hard on improving the quality of our laser plywood. Our Poplar plywood is now all AB graded – this is one of the top plywood gradings.

For more information on our Poplar plywood and also the plywood grading system, please refer to the links below:



www.kitronik.co.uk/plywoodgrading



www.kitronik.co.uk/poplarvideo

BAMBOO SHEETS

NEW!

These 5mm thin Side Bamboo sheets measure 600mm x 400mm. Bamboo is a versatile product and these thin Side Pressed sheets can be cut by hand or on the laser cutter. Bamboo is one of the fastest-growing, renewable resources in the world. It absorbs CO₂ in large quantities. With its properties comparable to hardwood, bamboo is the ideal alternative to increasingly scarce tropical hardwoods. The sheets are available in a natural or caramel colour.



All sheet sizes 600 x 400mm

Description	Code	1+	10+	100+	250+
5mm Bamboo Side Pressed Natural sheet	3294	£10.50	£10.00	£9.75	£9.45
5mm Bamboo Side Pressed Caramel sheet	3296	£10.50	£10.00	£9.75	£9.45



There is a once per order delivery charge for some of our material sheets. Check www.kitronik.co.uk/delivery-info for relevant delivery charges.

OAK VENEERED OKOUME

These high quality 1.5mm Oak Veneered Okoume core Plywood sheets (600mm x 400mm) are suitable for a wide range of applications including laser cutting. Due to its Okoume core, it is lighter and more flexible than comparable products.

Designed for specialist applications, these plywood sheets tend to have a slightly higher quality feel. The surface of the material is sanded to a smoother finish than that of most plywoods.



www.kitronik.co.uk/3265

Description	Code	1+	10+	100+	250+
1.5mm Oak Veneered Okoume - 600mm x 400mm	3265	£12.95	£12.45	£12.05	£11.05

OAK VENEER PLYWOOD

These Oak Veneer Plywood Sheet with a Chinese Poplar underside and core are ideal for structural projects requiring a high-quality appearance and finish on the topside and panelling. This product is suitable for applications where a high quality outside surface is needed where visual aspects on the underside are not critical. This is a 'Crown Cut' veneer with an 'A grade' Oak topside and a 'CC (low) grade' Poplar reverse.



www.kitronik.co.uk/3218

Description	Code	1+	10+	100+	250+
3.6mm Oak Veneer Plywood - 600mm x 400mm	3218	£3.45	£3.20	£3.10	£3.00

DECOFLEX VENEERS

Decoflex is a jointed sheet of veneer that is extremely easy to work with. The jointed veneer sheet is first pressed onto paper. The wood fibres are then broken and finally it is also pre-sanded with a 150 grain. This gives a flexible sheet of high quality wood veneer. The rear face of the veneered sheet is covered in a paper backing that is the same colour as the chosen wood.



Maple veneer ^



Sapele veneer ^

- Key features:**
- Can easily be cut using a laser cutter or sharp knife.
 - Flexible, perfect for curved surfaces.
 - You can glue Decoflex onto any substrate in next to no time.
 - An easy and quick way of finishing the edges of any other type of panel material.

Our range of Decoflex veneers have a nominal 1mm thickness.

Description	Code	1+
Flexible Maple veneer sheet – 600mm x 400mm	3249	£8.20
Flexible Maple veneer sheet – 400mm x 300mm	3250	£4.20
Flexible Maple veneer sheet – 300mm x 200mm	3251	£2.20
Flexible Sapele veneer sheet – 600mm x 400mm	3253	£8.20
Flexible Sapele veneer sheet – 400mm x 300mm	3254	£4.20
Flexible Sapele veneer sheet – 300mm x 200mm	3255	£2.20



There is a **once per order delivery charge** on all acrylic, cork, Styrofoam, polypropylene, plywood and MDF sheets (including veneered plywood and MDF). In most UK locations this is £6.50, see the front of the catalogue for more information. Standard delivery applies to A4 sized sheets.

MDF SHEETS

Our Laser Compatible Medite Premier MDF sheets are highly versatile. They are produced using superior wood refining technology and specially designed resins. Benefits are consistency of quality and thickness, as well as reduced tool wear.

This product conforms to E1 (low) formaldehyde levels. While there is no official classification for 'Laser Grade' MDF, we believe that E1 conforming MDF is the safest and best MDF for using in a laser cutter.



Description		Code	1+	10+	100+	250+
3mm MDF - 300mm x 200mm		3273	£0.40	£0.35	£0.29	£0.27
3mm MDF - 400mm x 300mm		3257	£0.78	£0.69	£0.53	£0.49
3mm MDF - 600mm x 300mm		3226	£0.91	£0.87	£0.83	£0.75
3mm MDF - 600mm x 400mm		3211	£1.36	£1.16	£0.96	£0.86
3mm MDF - 800mm x 600mm		3227	£2.22	£2.11	£2.06	£1.85
4mm MDF - 400mm x 300mm		3268	£0.88	£0.77	£0.66	£0.60
4mm MDF - 600mm x 300mm		3269	£1.14	£1.04	£0.99	£0.90
4mm MDF - 600mm x 400mm		3229	£1.45	£1.36	£1.32	£1.15
4mm MDF - 800mm x 600mm		3230	£2.88	£2.68	£2.49	£2.30
6mm MDF - 400mm x 300mm		3258	£1.31	£1.13	£0.93	£0.85
6mm MDF - 600mm x 300mm		3232	£1.67	£1.58	£1.49	£1.35
6mm MDF - 600mm x 400mm		3212	£2.40	£2.21	£1.97	£1.85
6mm MDF - 800mm x 600mm		3233	£4.30	£4.02	£3.79	£3.45
9mm MDF - 600mm x 400mm		3235	£3.22	£2.98	£2.79	£2.55
9mm MDF - 800mm x 600mm		3236	£6.40	£5.96	£5.61	£5.15



Minimum order quantities apply to 800 x 600mm sheets.

Please refer to the website for details: www.kitronik.co.uk/800x600

VENEERED MDF

These high quality veneers are an excellent example of a composite material, using natural timber Hardwoods for their decorative properties and a manufactured timber (laser compatible MDF) core for ease of use. These materials can be easily sawn, milled and laser cut. The hardwood surface is unfinished and can be oiled, waxed, or varnished.



^ Oak



^ Cherry



^ Black Walnut



^ Ash



^ Steamed Beech



^ American Maple

Description	Code	1+	10+	100+	250+
4mm Oak Veneered MDF - 300mm x 200mm	32102	£1.25	£1.15	£1.10	£1.05
4mm Oak Veneered MDF - 400mm x 300mm	NEW! 3266	£2.30	£2.09	£1.95	£1.85
4mm Oak Veneered MDF - 600mm x 300mm	3263	£3.15	£2.95	£2.85	£2.75
4mm Oak Veneered MDF - 600mm x 400mm	3219	£4.24	£4.00	£3.85	£3.65
4mm Oak Veneered MDF - 800mm x 600mm	3270	£8.20	£7.90	£7.60	£7.35
6mm Oak Veneered MDF - 600mm x 400mm	3245	£8.50	£8.05	£7.85	£7.65
4mm Cherry Veneered MDF - 600mm x 300mm	NEW! 3284	£3.95	£3.85	£3.70	£3.65
4mm Cherry Veneered MDF - 600mm x 400mm	3259	£4.37	£4.12	£3.99	£3.85
4mm Cherry Veneered MDF - 800mm x 600mm	NEW! 3285	£9.55	£9.35	£9.15	£8.95
4mm Black Walnut Veneered MDF - 600mm x 400mm	3280	£8.59	£8.09	£7.69	£7.29
6mm Black Walnut Veneered MDF - 600mm x 400mm	3246	£9.69	£9.49	£8.55	£7.55
4mm Ash Veneered MDF - 600mm x 400mm	3256	£4.29	£4.05	£3.90	£3.70
6mm Ash Veneered MDF - 600mm x 400mm	3247	£7.69	£7.49	£6.65	£6.15
4mm Steamed Beech Veneered MDF - 600mm x 400mm	3282	£3.85	£3.65	£3.45	£3.26
4mm Pine Veneered MDF - 600mm x 400mm	NEW! 32101	£4.25	£4.00	£3.85	£3.65
4mm American Maple Veneered MDF - 600mm x 300mm	3283	£4.30	£4.00	£3.85	£3.65

CORK SHEETS

These high quality and versatile cork sheets are a fantastic and ecofriendly material that can be laser cut/engraved. **Sheet size 600mm x 400mm.** Available in 1mm and 3mm, with and without adhesive backing.

1MM LASER CORK SHEET



www.kitronik.co.uk/3289

Code	1+	10+	100+	250+
3289	£2.95	£2.75	£2.55	£2.25

1MM LASER CORK SHEET WITH ADHESIVE BACKING



www.kitronik.co.uk/3290

Code	1+	10+	100+	250+
3290	£6.95	£6.75	£6.35	£5.95

3MM LASER CORK SHEET



www.kitronik.co.uk/3287

Code	1+	10+	100+	250+
3287	£4.45	£4.25	£3.95	£2.95

3MM LASER CORK SHEET WITH ADHESIVE BACKING



www.kitronik.co.uk/3288

Code	1+	10+	100+	250+
3288	£9.95	£9.45	£8.95	£8.45

3MM CORK SHEETS

These high quality and highly versatile 3mm Cork sheets, measuring 915mm x 610mm, are one of the most eco-friendly raw materials on the planet and they also offer a wide range of Design and Technology applications. They are suitable for laser cutting and laser engraving and as such, it can be cut into intricate shapes very easily and then laser decorated.

If you wanted to plan a lesson on raw material sustainability then there is NO other material that is better suited to serving as a positive example. The Cork industry is regarded as being very environmentally friendly as the tree that the bark comes from continues to grow and thrive after the bark is removed. Cork is also 100% recyclable.



www.kitronik.co.uk/3264



Supplied rolled

Description	Code	1+	10+	100+	250+
3mm Cork Sheet - 915mm x 610mm	3264	£4.95	£4.60	£4.25	£3.75

DID YOU KNOW?

Cork is sustainable because it is harvested from the live tree without cutting it down!

RAPID NEXT DAY DELIVERY

WHEN YOU ORDER BEFORE 3PM*

Our large scale warehouse allows us to hold a significant amount of stock, which dramatically reduces the chances of any out of stock items, even in the busy periods!

*Order by 3:00pm for same day dispatch and usually next day delivery. See www.kitronik.co.uk/delivery-info for full details.

RESOURCES

KIT SELECTOR, INDEX & GUIDES



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	Switches	Switch debounce	LDRs	Thermistors	Resistors	Potential divider	Capacitors	Thyristors as a latch	Op amps as comparators	Op amps as amplifiers	Logic gates	PICs	Transistors	Darlington pair	FETs	Monostable [555] timer	Astable [555] timer	Counter ICs	LEDs	Buzzer	Speaker	7 Segment Displays	Motors	
2101	Alarm	●			●		●									●			●	●				
2102	Battery tester				●		●		●	●														
2103	Electronic game	●										●								●				
2104	Timer	●			●		●									●				●	●			
2105	Xylophone				●	●						●	●										●	
2106	Rear bike light				●		●						●							●				
2107	Steady hand game (no solder)				●								●							●	●			
2108	Steady hand game (with latch)	●			●			●												●	●			
2109	Dice	●			●							●								●				
2110	Thermometer			●	●	●						●								●				
2111	Easy build timer	●			●		●						●							●				
2112	Light activated switch		●		●	●								●										
2113	Temperature activated switch			●	●	●								●										
2114	White LED torch	●																		●				
2116	Quiz buzzer	●			●			●			●		●							●	●			
2117	555 Astable (tone generator)	●			●	●	●										●					●		
2120	Dark activated colour changing LED		●		●	●								●						●				
2122	Programmable music box	●			●							●								●		●		
2123	Air freshener	●			●		●							●						●				●
2131	Colour changing USB lamp	●			●															●				
2132	White USB lamp	●			●															●				
2133	Light up decoration	●																		●				
2134	Solar garden light				●	●	●						●							●				
2136	Stereo amplifier				●		●															●		
2139	Timed night light		●		●	●	●								●					●				
2140	Wireless steady hand game				●					●					●					●	●			
2141	Deluxe stereo amplifier	●			●	●	●													●		●		
2143	High power stereo amplifier	●			●	●	●													●		●		
2144	Relay board				●	●	●	●	●						●					●				
2145	Coin cell power board	●																						
2146	LED picture frame	●			●	●	●								●					●				
2148	Squeezzy torch																			●				
2149	Record playback	●			●		●													●		●		
2150	Vibrobug - red	●																						●
2151	Vibrobug - black	●																						●
2155	5V LED matrix lamp - square				●															●				
2157	FM radio				●	●	●															●		
2158	3W class D stereo amplifier				●																			
2159	Bump and spin	●	●		●		●				●													●
2161	Micro USB lamp				●															●				
2162	USB fan	●			●																			●
2163	Learn to solder				●															●				
2165	Mono amplifier				●		●															●		
2167	Deluxe rear bike light	●			●		●						●		●		●			●				
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Prices and ordering

- 1.1** Orders must be placed by mail, telephone, fax, email or online.
- 1.2** Prices are exclusive of VAT.
- 1.3** When an order is made by telephone written confirmation is NOT required. If You choose to send written confirmation of an order you must ensure that the order is clearly endorsed "confirmation". Not endorsing the confirmation will result in the order being duplicated. You will then be responsible for settlement of the duplicated order.
- 1.4** If an item is not in stock you will be advised within 48 hours of receipt of your order. You will be offered an alternative product or you may cancel your order.

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- 2.1** Free delivery applies to most UK mainland locations (except for acrylic, Styrofoam, polypropylene, cork, plywood and MDF sheets, including veneered plywood and MDF) subject to a minimum value of £40.00. On all orders below £40.00 carriage will be charged at £3.95. Any order for Perspex, plywood, MDF, veneers, Styrofoam and polypropylene for mainland UK delivery will be charged at £6.50 per order.
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- 3.1** All orders must be paid not later than thirty days from the date of invoice.
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Ownership of the Goods

- 4.1** Ownership of the Goods delivered or to be delivered by Kitronik will only be transferred to You upon receipt of full payment of all sums owing to Us. Kitronik retain full legal and beneficial title to the Goods and reserve the right at any time to require You to deliver up the Goods to Kitronik. Failure to do this upon Kitronik's request will mean Kitronik may enter into any of Your premises or those of any third party premises where the Goods are being stored.

Guarantee

- 5.1** Unless otherwise specified and subject to clause 5.2, the Goods are guaranteed against defect caused by faulty materials or workmanship for a period of 12 months from the date of despatch.
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- (a) Kitronik are promptly notified in writing upon discovery that the Goods are defective due to faulty materials or workmanship;
- (b) the faulty goods are returned to Kitronik within 12 months from the date of despatch. They shall

be accompanied by proof of purchase (delivery note or invoice) and details of the nature of the defect.

(c) The Goods have been paid for in full.

(d) examination by Kitronik confirms that the suspected defect has not been caused by normal wear and tear, wilful damage, negligence, misuse, neglect, method of storage, faulty installation, faulty handling, testing or repair (without Kitronik approval), using the Goods in a manner which could not reasonably be expected during normal use or outside of the manufacturer's operating instructions.

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- 6.1** Kitronik's liability under the Guarantee shall be limited to replacing, repairing or issuing credit.
- 6.2** Except in respect of death or personal injury caused by the Kitronik's negligence, or liability for defective products under the Consumer Protection Act 1987, the Company shall not be liable to the Purchaser by reason of any representation (unless fraudulent), or any implied warranty, condition or other term, or any duty at common law, or under the express terms of the Contract, for loss of profit or for any indirect, special or consequential loss or damage, costs, expenses or other claims for compensation whatsoever (whether caused by the negligence of the Company, its employees or agents or otherwise) which arise out of or in connection with the supply of the Goods (including any delay in supplying or any failure to supply the Goods in accordance with the Contract or at all) or their use or resale by the Purchaser, and the entire liability of the Company under or in connection with the Contract shall not exceed the price of the Goods, except as expressly provided in these terms and conditions.
- 6.3** Subject to clauses 6.5 and 6.6 below and as otherwise expressly provided in this Agreement, all warranties, conditions or other terms whether express or implied by statute or common law or otherwise are excluded or limited to the fullest extent permitted by law. In particular Kitronik make no representation or warranty that the Goods are either of satisfactory or merchantable quality or fit for any purpose or that they conform to any description. You agree that You are responsible for Your own skill and judgement in selecting the Goods.
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- 6.5** Kitronik shall not be liable for incidental or consequential damages for any breach hereof, including but not limited to costs of removal and re-installation of Goods, loss of goodwill, loss of profits or loss of use.
- 6.6** Nothing shall limit Kitronik's liability in respect

of death or personal injury caused by Kitronik's own negligence.

Returns

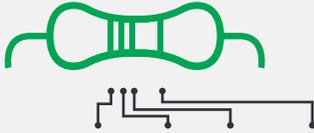
- 7.1** Other than Goods returned under Guarantee or for shortages or damages, returns will require Kitronik's prior Agreement and will only be accepted in the original packaging. A 25% handling charge with a minimum charge of £3.00 will be applied. Goods must be returned within 30 days of the date of delivery.
- 7.2** If there are shortages or damages to the Goods that have occurred during transit it you must notify us within 48 hours from the time of delivery, giving full details.
- 7.3** If Goods are returned You must quote the delivery note number in full.
- 7.4** Where Kitronik accept that there has been a shortage in Goods despatched or the Goods have been damaged in transit, Kitronik will replace the Goods or offer a full refund if no replacement is available.
- 7.5** Order Cancellation: Cancellation of an order will only be accepted after prior agreement. Kitronik will not accept cancellation for any items ordered specially by Kitronik on Your behalf.

Other Items

- 8.1** Dimensions and other ratings with relation to the products supplied are subject to normal tolerances. Unless otherwise stated, electrical ratings represent safe working limits.
- 8.2** Kitronik reserve the right to discontinue any product, make changes to product specifications or use different manufacturers to those stated in Kitronik's catalogue, promotional material or on Kitronik's website, without notice. Any information contained in documentation, printed or otherwise is correct to the best of Kitronik's knowledge at time of going to press.
- 8.3** If any provision of the Contract is held by a court or other competent authority to be invalid or unenforceable in whole or in part the validity of the other provisions of the Contract and the remainder of the provision in question shall not be affected.
- 8.4** Kitronik shall not be liable to the Purchaser or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Company's obligations in relation to the Goods, if the delay or failure was due to any cause beyond the Company's reasonable control. Without limiting the foregoing, the following shall be regarded as causes beyond the Company's reasonable control: acts of civil or military authority, national emergencies, fire or flood, acts of God, war or riots, actions or omissions of third parties.
- 8.5** The contractual terms governing any agreement or contract (the "Contract") between Kitronik Ltd and those purchasing ("You", "you" or the "Purchaser") goods from the Company are contained exclusively within these terms and conditions which shall apply to all Contracts. The Contract shall to be governed by and construed in accordance with the laws of England and Wales whose courts shall have non-exclusive jurisdiction in connection with any dispute arising out of or in connection with it.
- 8.6** All images are used for illustration purposes only.

QUICK REFERENCE GUIDE

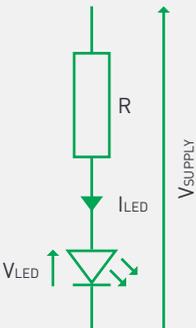
RESISTOR VALUES



Colour	1 st	2 nd	X	Tol
● Black	0	0		
● Brown	1	1	0	±1%
● Red	2	2	00	±2%
● Orange	3	3	000	
● Yellow	4	4	0000	
● Green	5	5	00000	
● Blue	6	6	000000	
● Purple	7	7		
● Grey	8	8		
○ White	9	9		
● Gold			÷ 10	±5%
● Silver			÷ 100	

1k = 1,000 Ω 1M = 1,000,000 Ω

LED CURRENT LIMIT RESISTORS



$$R = \frac{V_{\text{SUPPLY}} - V_{\text{LED}}}{I_{\text{LED}}}$$

Typical $V_{\text{LED}} = 1.8\text{V}$
 Typical $I_{\text{LED}} = 10$ to 20mA

OHM'S LAW

$$V = I \times R$$

Whereby: **V = Voltage** (in Volts)
I = Current (in Amps)
R = Resistance (in Ohms – Ω)

CERAMIC DISC CAPACITORS



Value is in pico Farads (pF)
 Example shown: 10,000pF

10
Value

3
Zeros

1 nF = 1,000pF
 1 μF = 1,000,000pF

CATALOGUE REFERENCE KEY

	Exclusive to Kitronik
	Teaching notes
	Key Stage 2/3
	Key Stage 3
	Key Stage 3/4
	Key Stage 4
	Added information
	Battery requirements
	Dimensions
	Web URL



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ORDER BEFORE 3PM*

*Order by 3:00pm for same day dispatch & usually next day delivery. See www.kitronik.co.uk/delivery-info for details.

T 0845 8380781 | 0115 970 4243
F 0845 8380782

A **Kitronik**
Unit 12a
Glaisdale Point
Nottingham
NG8 4GP

W www.kitronik.co.uk
E sales@kitronik.co.uk



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