



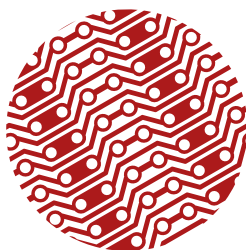
**2016  
FALL  
PRODUCT  
CATALOG**

BPS was founded to create prototyping boards that make the designer's job easier. Some useful PCB patterns simply weren't available at the time, or they had an unnecessarily high cost. BPS strives to deliver the prototyping products our customers need to build great things.



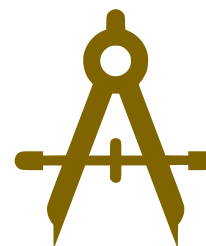
### **Great Value, High Quality**

BPS delivers high-quality breadboards and PCBs at a reasonable price. You get a great board everytime.



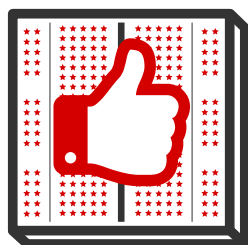
### **Unique Patterns**

We have many unique patterns not available elsewhere that make many prototyping assembly jobs easier and we introduce new patterns in response to customer demands.



### **Precision Focused**

BPS boards are precision drilled and precision etched. No more problems with off-center drilling or poorly etched tracks.



### **Superior BreadBoards**

BPS BreadBoards have precision long-life contacts that work well with thin wires and with big square-post headers.



### **Protective Coatings**

Our copper PCBs have an anti-tarnish protective coating which provides easy solderability and a long shelf-life.



### **Complete Documentation**

Every product comes with a datasheet that includes product specifications, drawings and dimensions.



### **RoHS Compliant**

All of our products are lead-free and RoHS compliant ensuring your safety while helping keep the environment free of toxins.



### **Flame Retardant**

All boards use high-quality FR4 laminate with UL94-VO flame retardant rating.



### **Online/Retail Sales Friendly**

Products are ready for store front and online sales. We provide all the information and graphics needed for promotion. We link to your sales pages to help you sell.

## Plug-in BreadBoards & Solderable PCB BreadBoards



**Build & Test... Solder & Keep!**



170-point breadboard  
BB170™ - White  
BB170C - Colored  
(multiple color options)



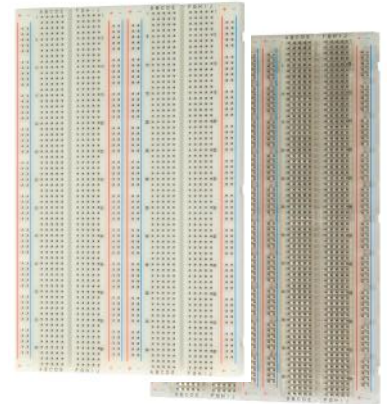
300-point breadboard  
BB300™ - White



400-point breadboard with  
four power rails  
BB400™ - White  
BB400T™ - Transparent



830-point breadboard with  
four power rails  
BB830™ - White  
BB830T™ - Transparent



1660-point breadboard with  
eight power rails  
BB1660™ - White  
BB1660T™ - Transparent



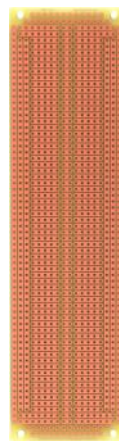
SB300™  
Matches the layout  
of the BB300



SB400™  
Matches the layout  
of the BB400



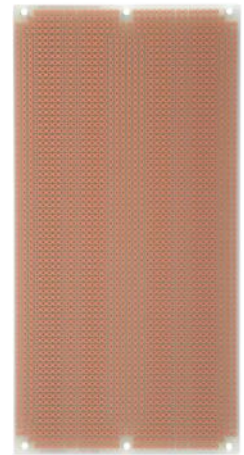
SB404™



BR1™  
Matches the layout  
of the BB830

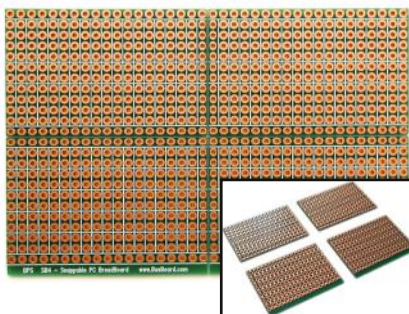


SB830™



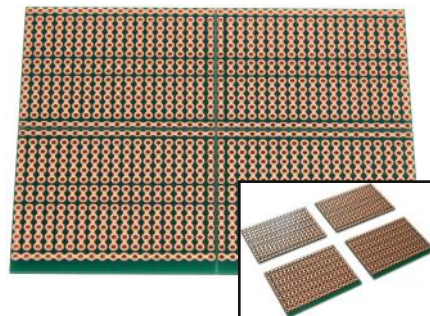
SB1660™  
Matches the layout  
of the BB1660

## Snappable Solderable PCB BreadBoards



### SB4™

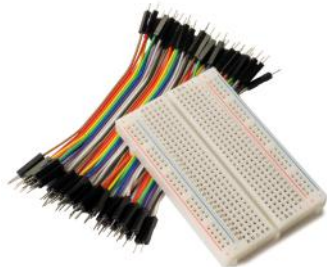
Snap into 4 smaller boards - two with 4-hole strips and two with 2-hole strips, each with power rails. Double-sided, plated holes, top side silkscreen.



### SB5™

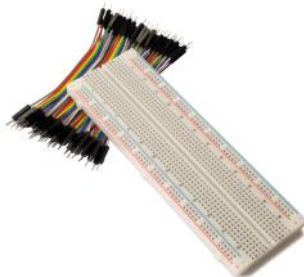
Snap into 4 smaller boards with a 5-hole strip breadboard pattern, each with power rails. Double-sided, plated holes, top side silkscreen.

## BreadBoard Kits



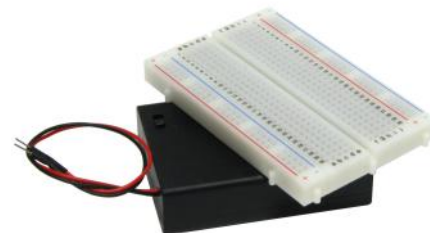
### KIT-BB400+ZW

BB400 BreadBoard with 10cm Male-to-Male ZipWires™.



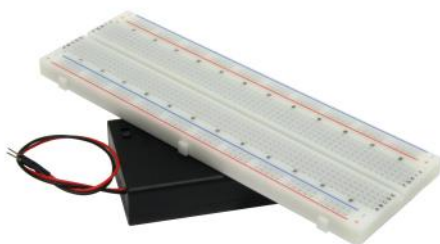
### KIT-BB830+ZW

BB830 BreadBoard with 10cm Male-to-Male ZipWires™.



### KIT-BB400+PW3

BB400 BreadBoard with 3AA Battery Box with switch.



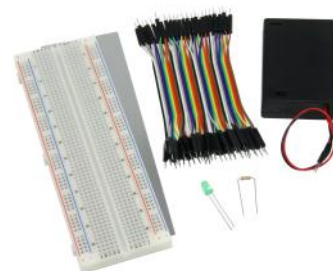
### KIT-BB830+PW3

BB830 BreadBoard with 3AA Battery Box with switch.



### BB400-KIT

A BB400 BreadBoard, 10cm Male-to-Male ZipWires, 3AA Battery Box with switch, along with an LED and resistor.



### BB830-KIT

A BB830 BreadBoard, 10cm Male-to-Male ZipWires, 3AA Battery Box with switch, along with an LED and resistor.



### KIT-BB300+SB300

BB300 BreadBoard with matching Solderable PCB BreadBoard.



### KIT-BB400+SB400

BB400 BreadBoard with matching Solderable PCB BreadBoard.



### KIT-BB400+SB404

BB400 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.



### KIT-BB830+SB830

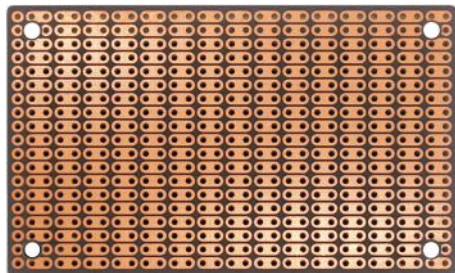
BB830 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.

**KIT-BB1660+SB1660**  
BB1660 BreadBoard with matching Solderable PCB BreadBoard with mounting holes.





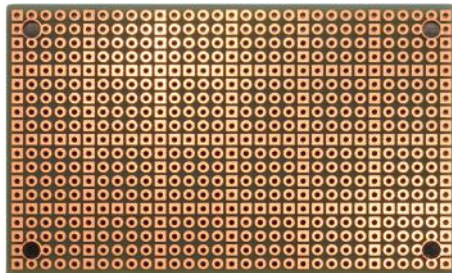
## Thru-hole ProtoBoards



### ProtoBoard

Convenient 2-hole ProtoBoard pattern provides an easy way to connect parts while maximizing useable area.

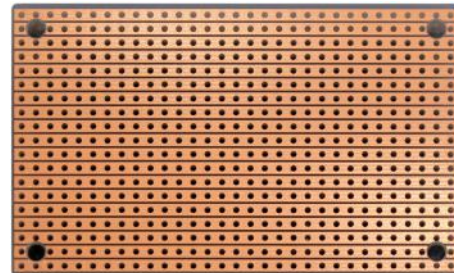
**SIZE 1** **SIZE 2** **SIZE 3**



### PadBoard

Pad-per-hole with a square pad every 5th hole for easy alignment. Double-sided, plated holes.

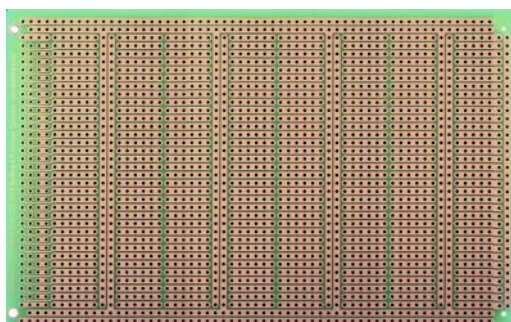
**SIZE 1** **SIZE 2** **SIZE 3**



### StripBoard

Standard stripboard pattern running the length of the board.

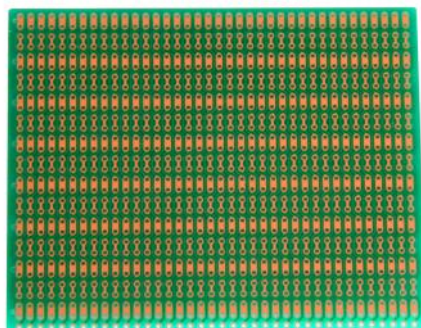
**SIZE 1** **SIZE 2** **SIZE 3**



### PowerBoard

6 hole strips with interleaved power and ground rail tracks.

**SIZE 3**



### BusBoard™

Zig-zag pattern to connect DIP IC's and DIL headers pin-to-pin.

**SIZE 2** **SIZE 3**

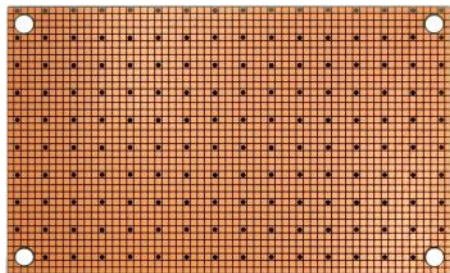
#### All ProtoBoards

- 1oz/ft<sup>2</sup> copper
- anti-tarnish coating
- lead-free, RoHS compatible
- 0.037" holes on 0.1" centers

## Overview of Sizes (to scale)



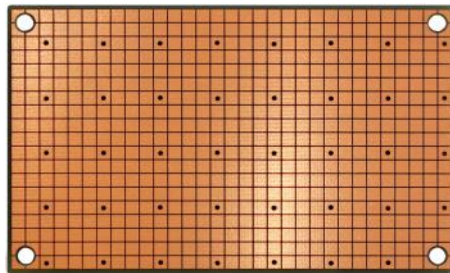
## Surface Mount ProtoBoards



### SMTpads - 50x50mil

Square pads on 0.050" centers.  
Double-sided with unplated holes.  
Ground plane or pads on back.

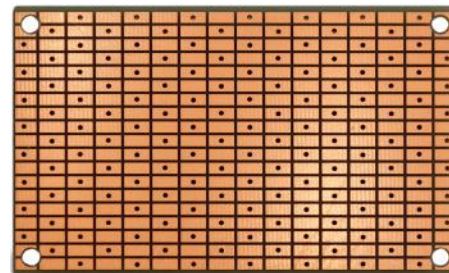
**SIZE 1** **SIZE 2** **SIZE 3**



### SMTpads - 100x100mil

Square pads on 0.100" centers.  
Double-sided with unplated holes.  
Ground plane on back.

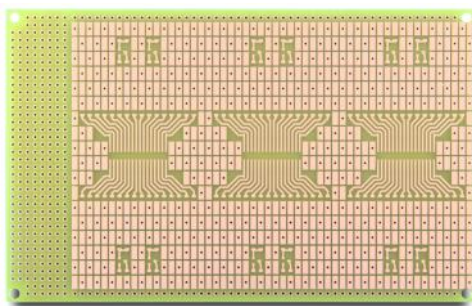
**SIZE 1** **SIZE 2** **SIZE 3**



### SMTpads - 200x100mil

Rectangular 0.200 x 0.100" pads.  
Double-sided with unplated holes.  
Ground plane on back.

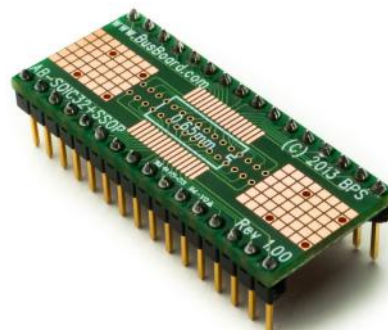
**SIZE 1** **SIZE 2** **SIZE 3**



### SMTboard

Prototyping circuit board for 0805, 1206,  
SOIC, SOT and other SMT parts. Three  
SOIC-32 footprints. Ground plane on back.

**SIZE 3**



### AB-SOIC32+SSOP

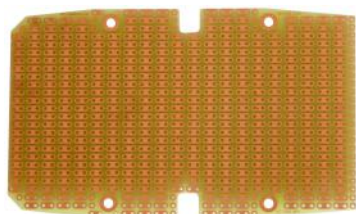
Adapter Board for SOIC and SSOP ICs,  
up to 32 pins, plated holes.  
Bonus SMT pads for discrete parts.  
1.6 x 0.7"

## Overview of Sizes (to scale)

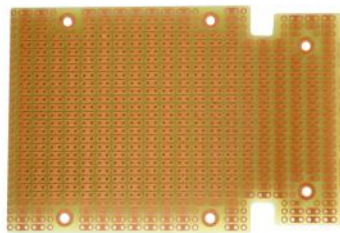




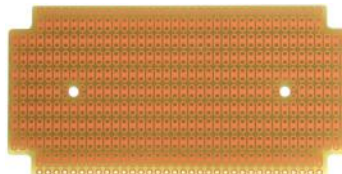
## Thru-hole ProtoBoards for Hammond Enclosures



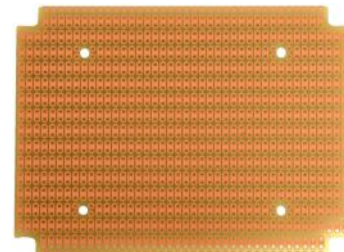
**PR1553B**



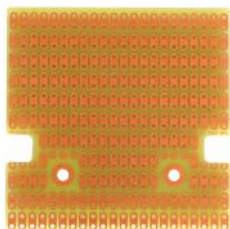
**PR1553DBAT**



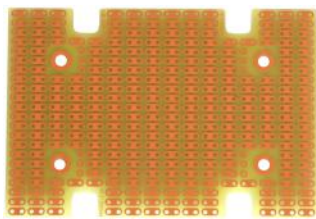
**PR1590B**



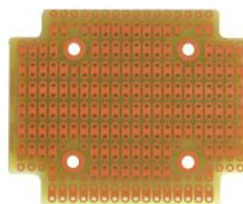
**PR1590BB**



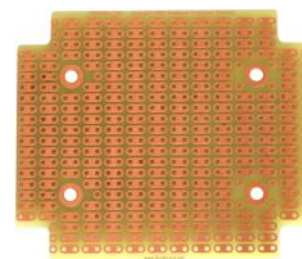
**PR1593K**



**PR1593L**



**PR1593P**



**PR1593Q**

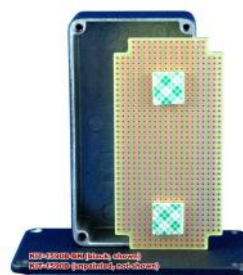
## Plastic & Die-Cast Enclosure Kits *(Available Colors: Black)*



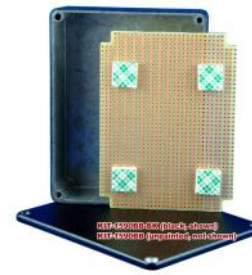
**KIT-1553B**



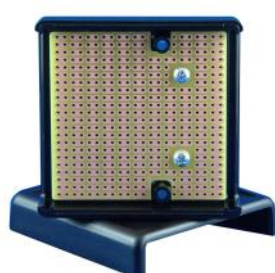
**KIT-1553DBAT**



**KIT-1590B**



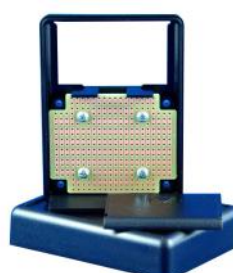
**KIT-1590BB**



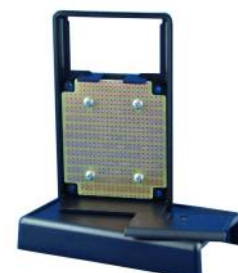
**KIT-1593K**



**KIT-1593L**



**KIT-1593P**



**KIT-1593Q**

## Aluminum Enclosures

(Available Colors: ☐ Silver ☐ Black)



**SIZE 1**



### BOX1-1455C

Accepts all Size1 PCBs. 4 card guides.

**SIZE 2**



### BOX2-1455L

Accepts all Size2 PCBs. 5 card guides.

**SIZE 3**



### BOX3-1455L

Accepts all Size3 PCBs. 5 card guides.

**SIZE 3**



### BOX3-1455N

Accepts all Size3 PCBs. 11 card guides.

*Enclosures available in either silver or black anodized extruded aluminum with matching end plates and polycarbonate plastic bezels. Screws and adhesive rubber feet included.*

## Aluminum Enclosure Kits

(Available Colors: ☐ Silver ☐ Black)

**SIZE 1**



### KBOX1-AC-PR2H

Size1 Aluminum enclosure with the PR2H1 PCB. Enclosure has 4 card guides and accepts all Size1 PCBs.

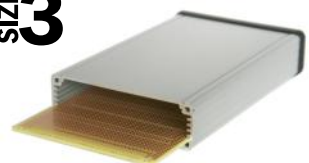
**SIZE 2**



### KBOX2-AL-PR2H

Size2 Aluminum enclosure with the PR2H2 PCB. Enclosure has 5 card guides and accepts all Size2 PCBs.

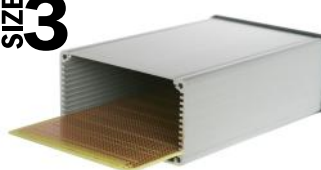
**SIZE 3**



### KBOX3-AL-POW

Size3 Aluminum enclosure with the POW3U PCB. Enclosure has 5 card guides and accepts all Size3 PCBs.

**SIZE 3**



### KBOX3-AN-POW

Size3 Aluminum enclosure with the POW3U PCB. Enclosure has 11 card guides and accepts all Size3 PCBs.

*Enclosure Kits available in either silver or black anodized extruded aluminum with matching end plates and polycarbonate plastic bezels. Screws and adhesive rubber feet included.*



## Microcontroller Development Boards



### AVR1284-3U

For Atmel 40 pin AVR microcontrollers with 16k, 32k, 64k or 128k flash program memory.

**SIZE 3**



### STM32-F3U

For the STMicro Discovery F3 board with STM32F303 microcontroller. 11 GPIO port headers, four UEXT footprints.

**SIZE 3**



### STM32-F4B1

For the STMicro Discovery F4 board with STM32F407VGT6 microcontroller. 10 GPIO port headers, two USART interfaces.



### STM32-VLB1

For the STMicro Discovery VL board with STM32F100RBT6 microcontroller. 6 GPIO port headers, multiple footprints.



### KIT-BB2+F3+F4

BusBoard zig-zag pattern gives access to both odd & even pins of DIL headers for the STMicro STM32-Discovery F3 or F4 modules.

**SIZE 2**

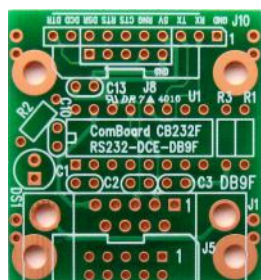


### KIT-BB3+F3+F4

BusBoard zig-zag pattern gives access to both odd & even pins of DIL headers for the STMicro STM32-Discovery F3 or F4 modules.

**SIZE 3**

## Peripheral PCB Adapter Boards



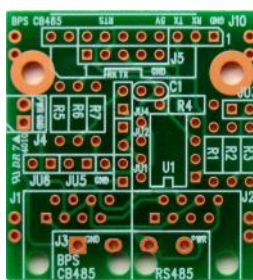
### CB-232F

ComBoard Adapter  
RS-232 DB-9F



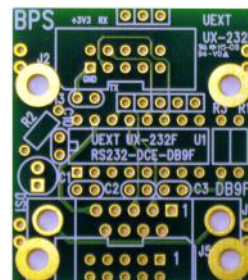
### CB-232M

ComBoard Adapter  
RS-232 DB-9M



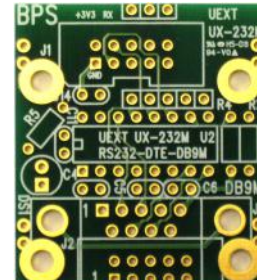
### CB-485

ComBoard Adapter  
RS-485



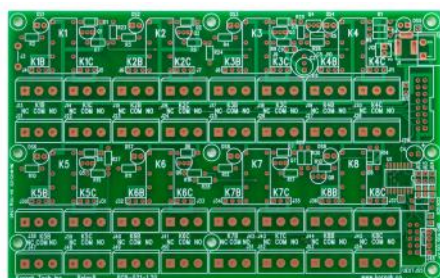
### UX-232F

UEXT Adapter  
RS-232 DB-9F



### UX-232M

UEXT Adapter  
RS-232 DB-9M



### RELAY8

**SIZE 3**

Octal relay board with terminal blocks. Each of the 8 DPDT relays has up to four 3-pin terminal blocks. Can be controlled via an I2C interface or 8 logic lines.

## ZipWires™

Multi-color ribbon cables of 40 unzippable wires in the 10 standard electrical colors to color-code your connections. PVC insulated cable with tinned contacts in black plastic housings. Color-code power, ground and other signal types to keep your circuit organized. Use as individual wires or keep wires together to group parallel connections.



### 10cm ZipWire Cables

ZW-MM-10 - Male to Male, great for small spans on breadboards

ZW-MF-10 - Male to Female, great as extension wires or with square post headers

ZW-FF-10 - Female to Female, great with square post headers

KIT-ZW-10x3 - Multi-pack that includes one of each 10cm ZipWire type



### 20cm ZipWire Cables

ZW-MM-20 - Male to Male, great for large spans on breadboards

ZW-MF-20 - Male to Female, great as extension wires or with square post headers

ZW-FF-20 - Female to Female, great with square post headers

KIT-ZW-20x3 - Multi-pack that includes one of each 20cm ZipWire type

## Wires & Clips With Pins For BreadBoards



### Alligator-Clips

CA-M-20 - Male ends

20cm long wires are soldered to the alligator clip. Machined male pins for breadboard use with strain relief heatshrink tubing. 6 colors per pack.



### J-Clips

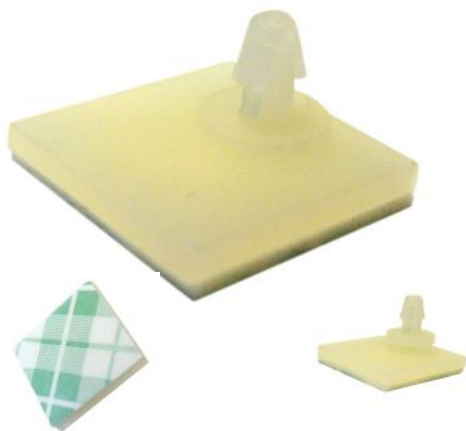
CJ-M-20 - Male ends

CJ-F-20 - Female ends

20cm long wire soldered to the J-clip. Machined male pins for breadboard use with strain relief heatshrink tubing. 2 colors per pack. Securely grab 0.1" header pins without touching adjacent pins.



## Adhesive Standoffs



Low profile adhesive standoffs with a 0.120" or 0.180" height for 0.125" diameter PCB holes. Offset, square (0.6 x 0.6") base allows use when holes are close to PCB edge. 3M adhesive tape backing for mounting.

### **0.120" Height**

SA120x8 - 8 pack  
SA120x24 - 24 pack  
SA120x100 - 100 pack  
SA120x500 - 500 pack  
SA120x1000 - 1,000 pack

### **0.180" Height**

SA180x8 - 8 pack  
SA180x24 - 24 pack  
SA180x100 - 100 pack  
SA180x500 - 500 pack  
SA180x1000 - 1,000 pack

## Power - Battery Holders & Clips with BreadBoard Pins



### **PW-3AA**

3 x AA battery box (4.5 Volts) with switch, 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.



### **PW-1AAX**

1 x AA battery holder (1.5 Volts), 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.

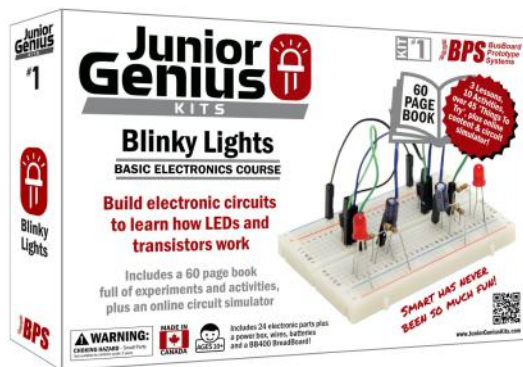


### **PW-9VX**

1 x 9V battery clip (9 Volts), 15cm - 26AWG stranded wires. Machined pins provide a reliable and rugged connection to breadboards.



## Junior Genius Kits #1 - Blinky Lights (JRG01-KIT)



***A great introduction to the world of electronics for both students and adults!***

Junior Genius Kits are built for experimentation, learning and fun! Experience the joy of seeing your first LED light up! The Blinky Lights kit leads you through 10 main activities from a simple LED circuit up to more advanced transistor LED blinky light circuits using industry-standard parts on a real-world breadboard.

Learn about voltage and current by using LEDs, resistors, capacitors, and transistors. You'll be able to build circuits using a schematic diagram - and there's plenty of help to get you there. Simple examples make it easy to grasp the basics, and 'What's Happening?' and 'Things To Try' sections encourage you to dig deeper.

***SMART HAS NEVER BEEN SO MUCH FUN!***

### FEATURES:

Includes Full-color illustrated 60-page manual • 10 core Activities plus many additional 'Things To Try' experiments • Online Club Access to additional knowledge, illustrations and activities • 24 parts plus a power box, wires, batteries and BB400 BreadBoard • Industry standard, reusable parts

## Replacement Parts Bag



(JRG01-PARTS)

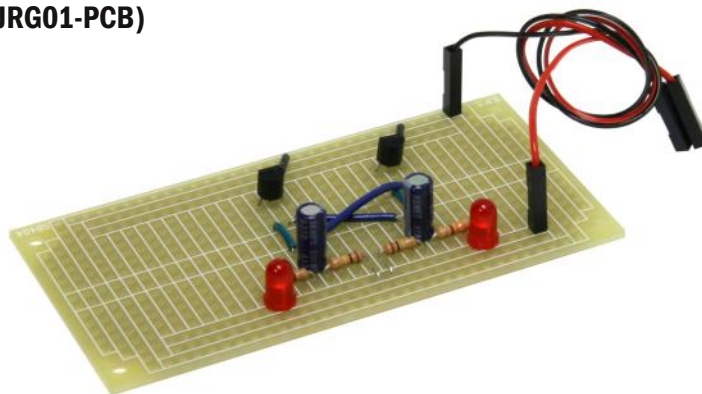


A complete set of electronic parts for Junior Genius Kits #1 - Blinky Lights. Electronic parts included: 4 LEDs (Red, Green), 4 Transistors (2N3904 NPN), 10 Resistors (150Ω, 330Ω, 1kΩ, 47kΩ, 100kΩ) and 6 Capacitors (10uF, 100nF).

Parts can be used with standard breadboards such as the BB400 and BB830.

## Solder Kit

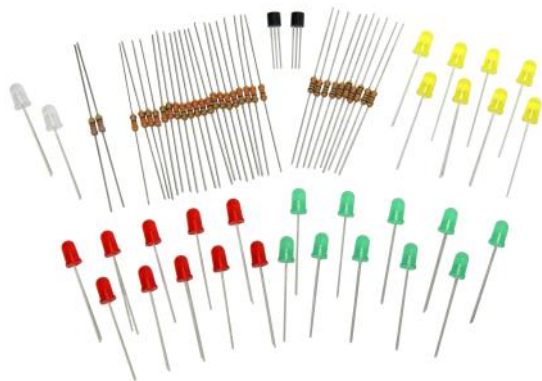
(JRG01-PCB)



All the parts needed to make the Junior Genius Kits #1 - Blinky Lights circuit on a solderable PCB breadboard. Learn to solder by building the same circuit you built in the breadboard kit.

Includes a circuit layout diagram, a link to the downloadable "Soldering is Easy" comic, and all of the resistors, LEDs, capacitors, transistors and wires needed to build the circuit and connect a PW-3AA battery box (not included) to the SB404 single-sided PCB.

## Expansion #1 - More LEDs (JRG01-EXP1)

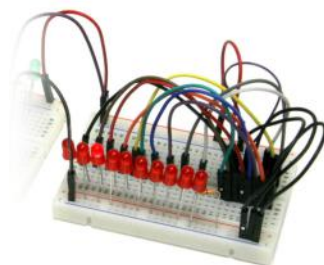


We all love lighting up lots of LEDs, so Expansion Pack #1 provides additional LEDs, resistors, and transistors to light up even more LEDs with your Blinky Lights kit! In addition to the red, green, and yellow LEDs included, bi-color LEDs are also provided to allow experimentation with LEDs that can be either red or green! The Junior Genius Club online content gets you started by showing how to switch multiple LEDs with a transistor so you can flash 5, 10 or more LEDs at a time!

## Expansion #2 - I.C. Chaser (JRG01-EXP2)



Take your circuits to a whole new level with Integrated Circuits! Learn how Integrated Circuits and diodes work with advanced LED chaser and flasher circuits in Expansion #2! Build three new types of circuits: 10 LED Chaser, 5 LED Back-and-Forth, and a 3 LED Traffic Light. An additional BB400 BreadBoard is included to give you more room to build circuits with the included LEDs, resistors, diodes, and male-to-male ZipWires. Basic instructions are included to get you started, with full instructions available online in the Junior Genius Club.



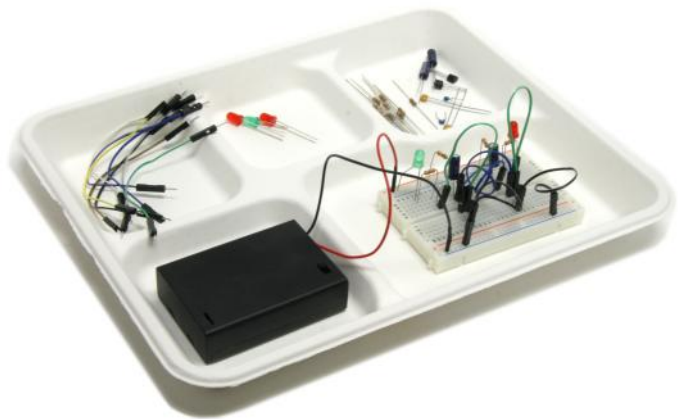
## Flashing Eyes LED Pumpkin Kit (JRG-PMPKN)



Add some flash to your Halloween pumpkin with our Flashing Eyes LED Pumpkin Kit. An easy-to-use BB170 BreadBoard is provided as a base for all your connections. Self-flashing LEDs allow you to simply plug them in and go without extra electronic parts, and the battery box is ready to use with breadboard-friendly pins. Basic instructions are included to get you started, but this kit can be re-used and expanded upon with additional parts and creativity!



## Blinky Lights Classrom Packs



We provide the retail kit in a classroom pack for 5, 20 or 30 students that includes all the same contents: 60 page instruction guide, BB400 BreadBoard, battery box, wires, and electronic parts. But it forgoes the flashy box for a helpful parts tray. This allows students to lay out all the parts without them falling off the desk. Peel-apart ZipWires help the students easily make connections without the need to cut and strip wires. Batteries are included!

An additional instruction guide is included for the educator along with a parts bag (JRG01-PARTS).

**JRG01-EDU5 - 5-student classroom pack**

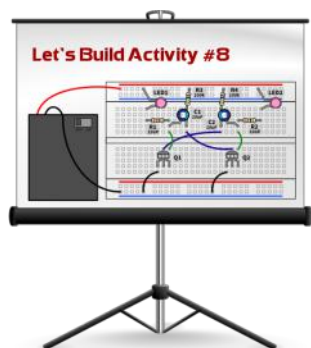
**JRG01-EDU12 - 12-student classroom pack**

**JRG01-EDU20 - 20-student classroom pack**

**JRG01-EDU30 - 30-student classroom pack**

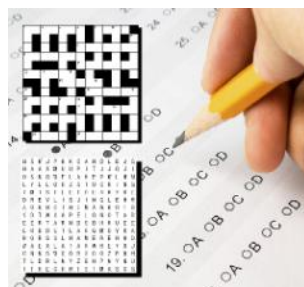
## Teacher Resources

We know you love teaching, and our cost-effective Teacher Resources help you cut down lesson prep time so that you can be a prepared and engaged teacher. A Teacher Resources Access Card is included for free in the 20 and 30 classroom kit packs giving a school-wide license to use the downloadable content. A license can be purchased separately for small classroom kit pack purchases.



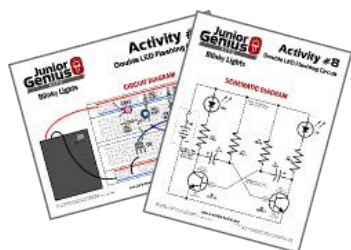
### PowerPoint Files

Each core activity has a pre-made PowerPoint presentation that steps through the construction of the circuit and ends with the circuit's schematic diagram.



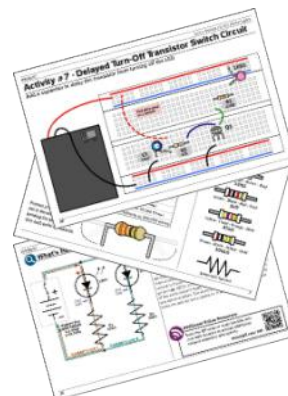
### Activity Sheets

Activity sheets to use for classroom exercises including wordsearch and crossword puzzles, spot the difference, draw the wires, and more.



### Printable Diagrams

We provide ready-to-print PDFs with circuit diagrams, schematic diagrams and more. Great for having at a student's desk, activity station, or as a PowerPoint replacement.



### Graphic Files

Graphics of electronic components, circuits, and diagrams used in the instruction guide are provided to aid in the creation of custom materials for your classroom. Make circuits, PowerPoint presentations or handouts with ease.





## **Contact Info**

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