

Low cost electric circuits kit

Prices and web sites accurate as of July 2005

If you have questions about the kit or suppliers, contact Mark Schober mschober@jburroughs.org

The kit is based on the recommended items for a CASTLE kit. Additional items that could be included are a strip of aluminum foil, a 30 cm length of nichrome wire, (available from Cuisenaire) and an assortment of resistors from 10 to 100 ohms (available from Jameco). A single student kit costs less than \$35, (batteries included!) \$10 of which is the digital multimeter.

Electric Circuit Kit contents per student group:

item	price/ item	supplier	number per lab group
circuit kits:			
digital multimeter	9.95	Jameco	1
bulb holder	0.895	Cuisenaire	4
#48 bulb	0.345	Cuisenaire	3
#14 bulb	0.345	Cuisenaire	5
24 gauge test lead	0.356	Jameco	10
4D battery holder	0.81	Jameco	1
6quart plastic box	0.99	Spacesavers.com	1
.47 Farad capacitor	2.59	Jameco	1
D-cell batteries	0.75	Cheapbatteries.com	3
compass	4.50	brasscompass.com	1

<http://www.brasscompass.com/compbackpacker.htm>

The Plastic Backpacker's Compass with Lanyard is offered at only \$4.50.

	<p>Plastic Backpacker's Liquid Damped Compass</p> <div style="background-color: #0070C0; color: white; padding: 5px; border-radius: 15px; display: inline-block; font-weight: bold;">IN STOCK. Usually Ships in One Business Day</div> <p>Quantity <input style="width: 40px;" type="text" value="1"/></p> <p><input type="button" value="Add to Cart"/> <input type="button" value="View Cart"/></p>	\$4.50
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Batteries:

<http://www.cheapbatteries.com>

Duracell Procell D \$.75 ea in bulk

Panasonic D \$.80 for four batteries – but they won't last as long

Office depot and office max have similar prices and may save you shipping costs.

Bulbs (#14 and #48) and sockets (circular bulb holder) from ETA Cuisenaire:
<http://www.eta-cuisenaire.com/catalog/product;jsessionid=0001MWRU1TTUTE05B5DLKV51MYA:tu5c5t89?deptId=ELECTRICITY&prodId=16096&parentId=SCIENCE&bc=2>

Other Cuisenaire items listed here may also be of interest:

IN16320	Circular Bulb Holder	Set of 10	\$8.95	<input type="text" value="0"/>
IN16360	Mini Sockets, 5/Pkg	Set of 5	\$7.95	<input type="text" value="0"/>
IN16095	Bulb 75W Coated	Set of 2	\$3.95	<input type="text" value="0"/>
IN16395	Bulb Mini #48, 1.5V	Set of 10	\$3.45	<input type="text" value="0"/>
IN16396	Bulb Mini #14, 2.5V	Set of 10	\$3.45	<input type="text" value="0"/>
IN16426	Test Leads, Insulated 18 Gauge 24"	Set of 6	\$6.95	<input type="text" value="0"/>
IN16427	Test Leads, Insulated 18 Gauge 18"	Set of 6	\$6.95	<input type="text" value="0"/>
IN16428	Test Leads, Uninsulated, 22 Gauge 16"	Set of 6	\$6.95	<input type="text" value="0"/>
IN16421	Copper Wire, Insulated 22 Gauge 100 ft.	Each	\$4.45	<input type="text" value="0"/>
IN16422	Copper Wire, Bare, 20 Gauge 100 ft.	Each	\$4.45	<input type="text" value="0"/>
IN16027	Copper Wire, Bare, 22 Gauge 100 ft.	Each	\$2.95	<input type="text" value="0"/>
IN16029	Copper Wire Magnet, 4 oz. 79 ft.	Each	\$4.95	<input type="text" value="0"/>
IN16028	Nichrome Wire, Bare, 26 Gauge 75 ft.	Each	\$2.95	<input type="text" value="0"/>
IN16423	Nichrome Wire, Bare, 32 Gauge 75 ft.	Each	\$2.95	<input type="text" value="0"/>

6 quart plastic Sterilite brand bins:

<http://www.spacesavers.com/4qtsttobysts.html>

shipping on the bins can be as costly as the bins themselves. Walgreens and Target generally have 6-quart bins in stock.

<http://www.jameco.com>

These clip leads are very light duty. You may want to pay more for the heavier leads from ETA Cuisinaire.

Alligator Clip Leads

- 24 AWG wire
- Color-coded, 15" long
- Insulated alligator clip on each end
- 10 per pkg. in assorted colors

Jameco P/N	10444
Mfg	JAMECO BENCHPRO
Mfg #	GAL01
In Stock	Yes

ALLIGATOR CLIP TEST LEADS 24AWG WIRE(19/36))SOLD 10/PK



# of Units	\$US
1+	4.39
10+	3.95
100+	3.56
1000+	3.20

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4-D Battery Holder

- Number of Cells: 4-D
- Connector: Wires
- Sides: Single

Jameco P/N	216418PS
Mfg	JAMECO RELIAPRO
Mfg #	BH-143-1A
In Stock	Yes
Number of Cells	4-D
Features	—
Connector	Wires
Sides	Single

BAT HOLDER,4-D,WIRES



# of Units	\$US
1+	1.15
10+	0.89
100+	0.81
500+	0.74

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Memory Back-Up Capacitor

Applications:

- Back-up on CMOS microcomputers, static RAM, DTSs (digital tuning systems)
- Memory back-up of remote controllers

Features:

- Excellent voltage holding characteristics for low back-up currents
- Small size vs. capacitance
- Voltage: 5.5VDC
- Capacitance: .47F
- Capacitor dimensions and lead spacing may vary

Jameco P/N	143010PS
Mfg	JAMECO VALUEPRO
Mfg #	EECF5R5U474
In Stock	Yes
Value (F)	0.47
Voltage (VDC)	5.5V

CAP,MEMORY BACK-UP, .47F,5.5V



Sale

# of Units	\$US
1+	3.49
10+	3.15
100+	2.59

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[Cat 253 , Page 71](#)

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[Data Sheet \(current\)](#) 64 KB

Digital Multimeter

- Display Count: 2000
- Number of Functions: 6
- Resolution (max DC) 100 μ V
- DC Voltage Ranges: 200mV-600V
- AC Voltage Ranges: 200V-750V
- DC Current Ranges: 200 μ A-10A
- Resistance Ranges: 200 Ω -2M Ω
- Diode Test
- Transistor hFE
- Size: 5.4"H x 2.7"W x 1.2"D

Jameco P/N	318781
Mfg	JAMECO BENCHPRO
Mfg #	BP-1562
In Stock	Yes

MULTIMETER,2000CNT,0.1mV RESO, DCV/ACV/DCI/R/DIODE/HFE/CONT



New

# of Units	\$US
1+	9.95
5+	9.45

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[Cat 253 , Page 225](#)