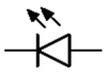
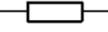
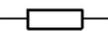
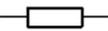
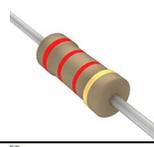
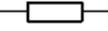
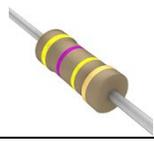
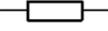
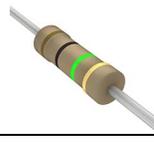


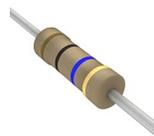
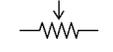
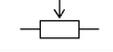
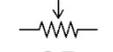
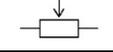
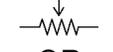
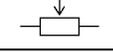
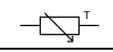
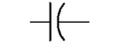
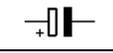
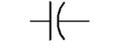
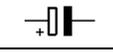
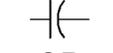
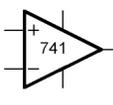
## 104-400 Earth Science Electronics Kit Parts List

**Notes:**

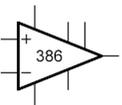
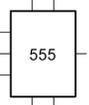
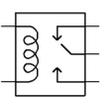
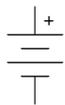
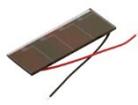
- Some parts look identical (except for the color code or part number). Be sure to put each part back into the proper bag.
- Many parts come on strips of tape. Gently peel off any tape and wipe off adhesive before using each part.
- Bend leads in the middle (not against the body of the component). This helps prevent the leads from breaking.

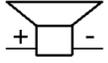
<b>LEDs</b>			
Symbol	Kit QTY	Image	Description
	2		5mm Clear Red LED, Forward Voltage (Vf) = 2V, Current = 20mA
<b>Resistors</b>			
All resistor tolerances are $\pm 5\%$ (gold stripe)			
 OR 	10		10 $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		360 $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		470 $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		2.2K $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		100K $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		470K $\Omega$ ¼W 5% Carbon Film Resistor
 OR 	10		1M $\Omega$ ¼W 5% Carbon Film Resistor

## 104-400 Earth Science Electronics Kit Parts List

 OR 	10		10MΩ ¼W 5% Carbon Film Resistor
 OR 	1	 102	1kΩ (code 102) Trimmer Potentiometer (Style may vary)
 OR 	1	 502	5KΩ (code 502) Trimmer Potentiometer (Style may vary)
 OR 	1	 103	10KΩ (code 103) Trimmer Potentiometer (Style may vary)
 OR 	1		Thermistor - Negative Temperature Coefficient (NTC) 10KΩ
<b>Capacitors</b> (Package color may vary)			
 OR 	2		0.1 μF 50V Radial Electrolytic Capacitor
 OR 	2		1 μF 50V Radial Electrolytic Capacitor
 OR 	2		100 μF 35V Radial Electrolytic Capacitor
<b>Transistors and Integrated Circuits</b>			
	1		NPN Phototransistor, Wavelength sensitivity: 450 to 1080nm (Visible light is considered 400 to 700nm) Note: Be careful, this looks just like an LED
	2		741 Operational Amplifier (Op-Amp) Integrated Circuit (IC)

## 104-400 Earth Science Electronics Kit Parts List

	1		386 Operational Amplifier (Op-Amp) Integrated Circuit (IC)
	1		555 Timer Integrated Circuit (IC)
<b>Relays</b>			
	1		9V Relay (PN PE014006 or PE014012)
<b>Power Supplies and Battery Connectors</b>			
	2		9V Alkaline Battery (Brand may vary)
	2		9V Battery Connector with plug for breadboard jumpers
 OR	1		Solar Cell 1.5V
<b>Prototyping Supplies</b>			
	1		400 Point Solderless plug-in breadboard
	1		Alligator Clip test leads (Pack of 10)
	1		Jumper Kit Various colors 22AWG 70PCS

<b>Speakers and Buzzers</b>			
	1		Round 8 Ohm Speaker 2 Watt, 1" Diameter
<b>Motors</b>			
	1		Hobby Motor (6600 RPM @ 12V)