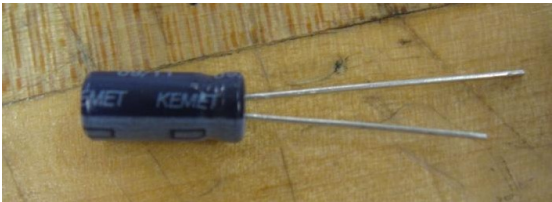


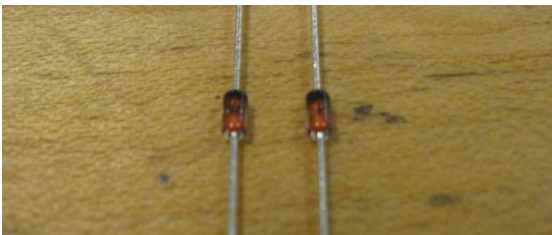
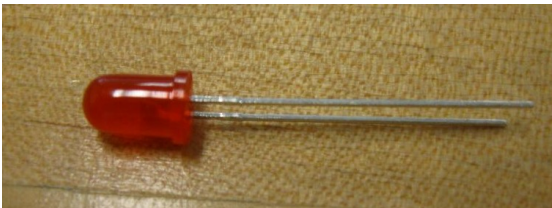




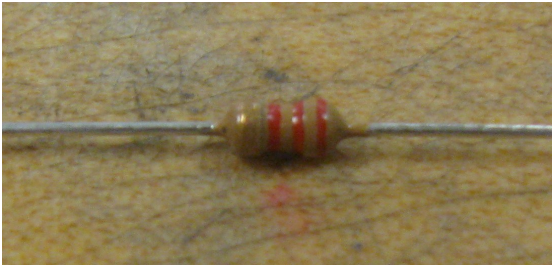
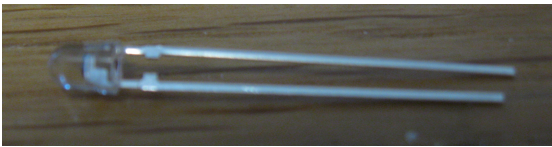

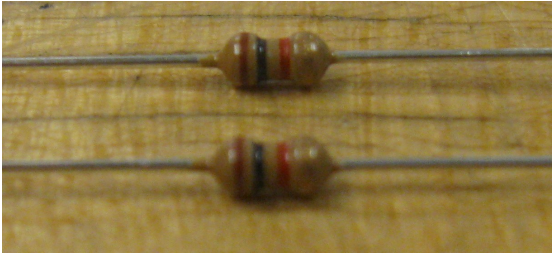

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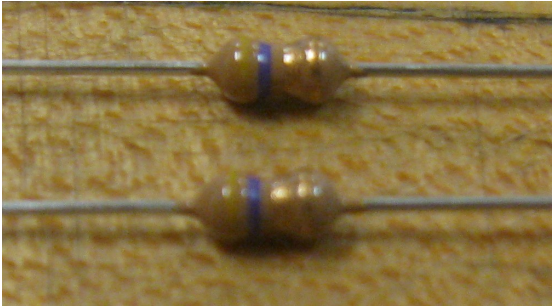
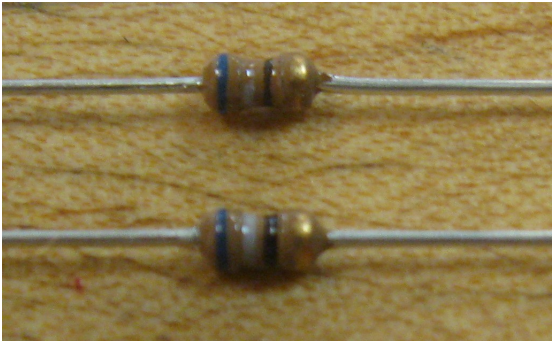


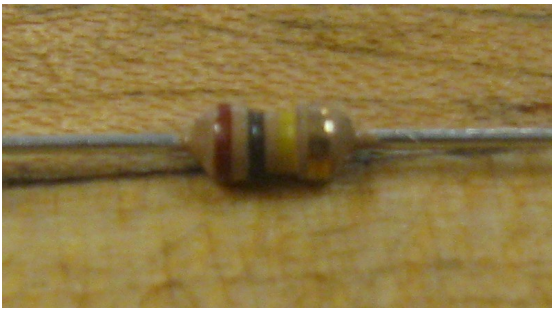
Music Synthesizer Parts List

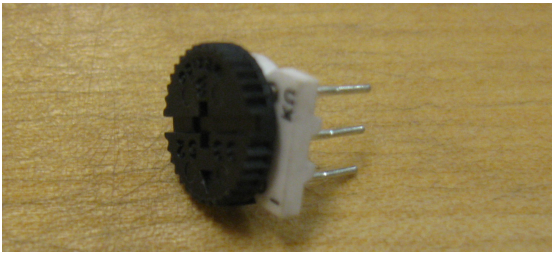


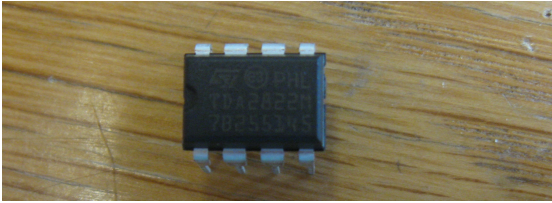
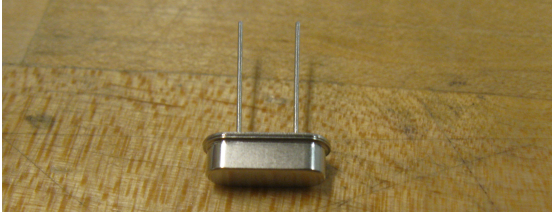


1	 A green printed circuit board (PCB) with various electronic components and traces. The board is labeled "R1022-THT-1" and "Music Synthesizer for Arduino" with "© Woodruff - July 2012" and "v1.0.0" printed on it.	PCB	Printed circuit board
2	 Two images showing hardware: the top image shows four silver metal standoffs, and the bottom image shows four silver metal screws.	(4) Standoffs Screws	“Legs” to support board
3	 Two images of a black battery case. The top image shows the closed case, and the bottom image shows the case open with internal components including a battery, a microcontroller, and other electronic parts.	BT1	Battery case With parts inside: IC1 - ATmega328P U1 - MCP4921 U2 - TDA2822M
4	 Two yellow electrolytic capacitors with silver leads, used for decoupling.	(9) C1, C5, C6, C7, C8, C11, C12, C13, C14	0.1uF capacitor Marked “104”

5		C10	<p>10uF capacitor</p> <p>NOTE: polarized</p>
6		(2) C2, C3	<p>22pF capacitor</p> <p>Marked "22J"</p>
7		C9	<p>0.01uF capacitor</p> <p>Marked "103"</p>
8		(2) D1, D2	<p>Diode (3.3V zener)</p> <p>NOTE: polarized</p>
9		(8) D3, D4, D5, D6, D7, D8, D9, D10	<p>Red LED</p> <p>NOTE: polarized</p>
10		IC1	<p>ATMega328 Microcontroller</p> <p>NOTE: polarized</p>

11		J1	USB connector
12		R1	2.2k resistor (red, red, red)
13		R10	Light sensor NOTE: polarized
14		R11	47k resistor (yellow, violet, orange)
15		(2) R12, R13	1k resistor (brown, black, red)
16		R14	1.5k resistor (brown, green, red)

17		<p>(2) R15, R16</p>	<p>4.7 ohm resistor (yellow, blue, gold)</p>
18		<p>(2) R2, R3</p>	<p>68 ohm resistor (blue, grey, black)</p>
19		<p>R4</p>	<p>36k resistor (orange, blue, orange)</p>
20		<p>R8</p>	<p>10k resistor (brown, black, orange)</p>
21		<p>R9</p>	<p>100k resistor (brown, black, yellow)</p>

22		RV1	Volume control (potentiometer)
23		SP1	Speaker (connect with wires)
24		(10) SW2, SW3, SW4, SW5, SW6, SW7, SW8, SW9, SW10, SW11	Buttons
25		U1	MCP4921 DAC = Digital Analog Converter NOTE: polarized
26		U2	TDA2822M Audio Amplifier NOTE: polarized
27		X1	16 MHz Quartz crystal