

Materials List - Simple Oscillator (adapted from <https://www.lookmunnocomputer.com/projects/#simplest-oscillator>)

Item	Checklist	Example of Components*	Notes
		* These links are meant to help beginners find the right items, but there may be cheaper or faster ways of shopping depending on your needs and location. <u>Quantities:</u> Only 1 of each item is required except for a few items which are highlighted in the notes.	
Speaker/ Amplifier	<input type="checkbox"/>	Something you already have access to. If you don't have speakers and want to make more sound electronics projects, the "Alternative Speaker Setup" listed at the bottom may be a good option for you.	Speakers must have a 1/4" or 1/8" audio input. 1/8" audio plugs/jacks are what wired earbuds or computers commonly use. 1/4" jacks are the larger ones often found on guitar amps.
1/8" (3.5mm) Audio Plug	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/3-5mm-mono-audio-plug-to-alligator-clips	You can solder on wires instead of buying a plug with Alligator clips but they will make things easier if you are a beginner. If you are using an amp with a 1/4" input you will also need to buy an adapter for this project: https://www.avshop.ca/wire-amp-cable-adaptors-hard/hosa-1-8in-trs-female-to-1-4in-trs-male-adaptor
1k Resistor	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/14492	You only need 1 for this project by many electronics components such as resistors are commonly sold in packs.
100k Resistor	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/through-hole-resistors-100k-ohm-5-1-4w-pack-of-25	
10k Potentiometer	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/panel-mount-10k-potentiometer-breadboard-friendly	
2N3904 Transistor	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/521	You may want to buy a few in case they break. If you think you'll do more electronics projects later, consider buying a transistor kit like this instead: https://www.wish.com/product/transistorkit
LED	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/5mm-green-color-led-lamp-light	You only need 1 LED for this project, but you can also try different colours to change the pitch.
10uF Capacitor	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/10uf-50v-electrolytic-capacitors-pack-of-10?variant=24126766275&currency=CAD	You can use smaller value capacitors for higher pitch. You may want to buy a capacitor kit to save money on future projects and have a variety of capacitors to try: https://elmwoodelectronics.ca/products/13698
Breadboard and Wire	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/half-size-breadboard-78-piece-22awg-jumper-wire-bundle	Can be bought separately.
2 x 9 volt Batteries	<input type="checkbox"/>	https://www.digikey.ca/en/products/9volt	TWO 9v batteries required (or 3 if you do the alternative speaker setup below). Any brand will work. digikey.ca is another good place to buy electronics supplies.
2 x Battery Connector, Snap 9V with Leads	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/battery-connector-snap-9v-with-4-leads	TWO 9v battery snaps required (or 3 if you do the alternative speaker setup below).
Alternative Speaker Setup		If you don't have access to an amp or speakers you can build some yourself with these items:	
Speaker	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/mini-metal-speaker-w-wires-8-ohm-0-5w	
Amp Module	<input type="checkbox"/>	https://www.creatroninc.com/product/tda7297-30w-stereo-audio-amplifier-module/	You will also need a small flathead screwdriver for this.
Battery Connector, Snap 9V with Leads	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/battery-connector-snap-9v-with-4-leads	
9 volt battery	<input type="checkbox"/>		Any brand. 3 in total for this project.
DC Power Adapter - 2.1mm plug to screw terminal block	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/male-dc-power-adapter-2-1mm-plug-to-screw-terminal-block	Requires a small Philips screwdriver.
Precision Screwdrivers	<input type="checkbox"/>	https://elmwoodelectronics.ca/products/424-adafruit-precision-screwdriver-set-6-pieces	Used to clamp wires into the terminal blocks.