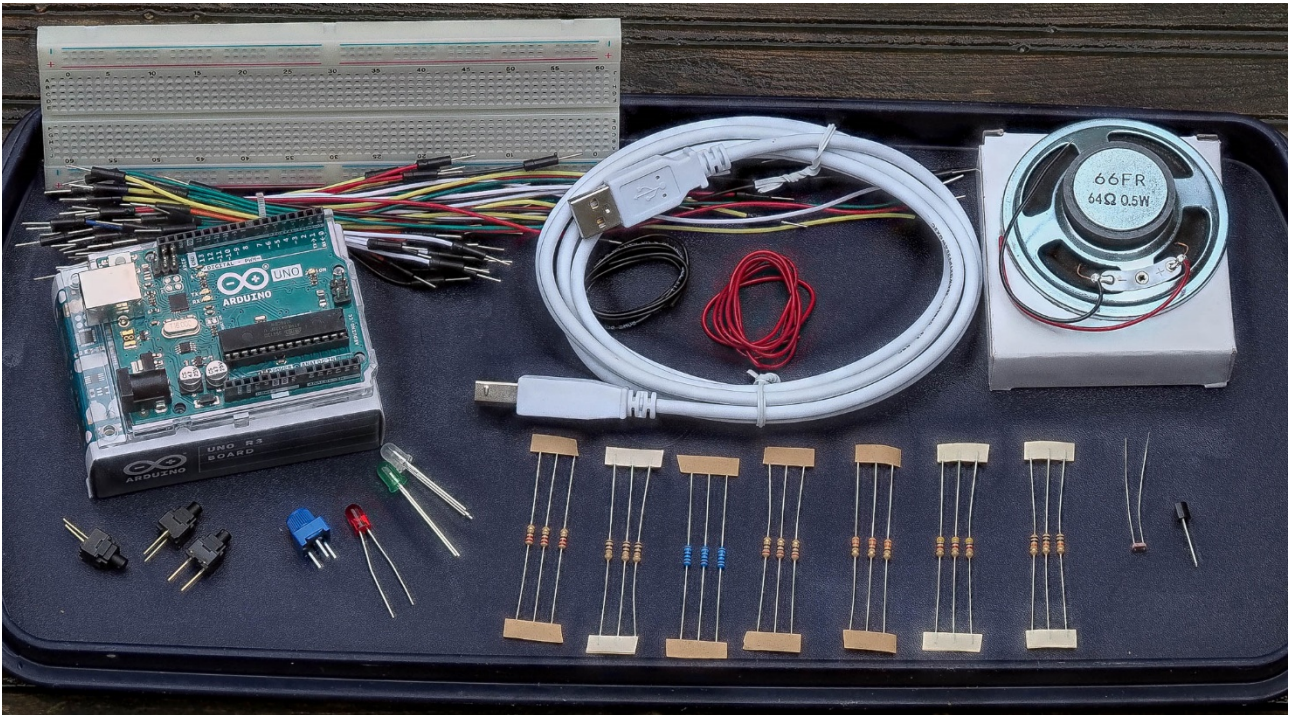


## Design Thinking and Electronic Prototyping, Personal Box Contents



- Arduino UNO + USB cable
- Breadboard, 1 pc
- Jumper wires, ? pcs
- Cabling, 0.5 m – red and black
- Light Dependent Resistor
- Temperature sensor, DS18B20, 1 pcs
- Potentiometer (trimmer type), blue, 10 kohm, 1 pc
- Button switches, 3 pcs
- Speaker, 64 ohm
- LED red, 1 pc
- LED green, 1 pc
- RGBLED, four leads, common cathode, 1 pc
- Resistors (100, 180, 220, 270, 330, 4,7k ja 10k), 3 pcs /each

### WARNINGS:

Temperature sensor is very sensitive for installation. Make sure to install the leads properly, as the sensor will break otherwise (see wiki for the instructions).

Always use a resistor when plugging in an LED.

The leads within the breadboard may not always be continuous. Check those out before assuming that your circuit works! You can use multimeter and jumper cables for studying how the breadboard is wired.

## Where to purchase

In order to get the physical components to your local country outside Finland, you need to purchase the components on your own. Here is a set of links to Farnell. The same components are often available also from other vendors, such as

Mouser (<https://eu.mouser.com/cs/localsites?qs=0gZ0gv0KDwsgKSbV9hbU5Q==> ) or

Digikey (<https://www.digikey.com/>).

Arduino UNO

<https://fi.farnell.com/arduino/a000066/arduino-uno-evaluation-board/dp/2075382>

Breadboard

<https://fi.farnell.com/multicomp/mcbb830/bread-board-abs-solderless-56/dp/2527467>

USB cable

<https://fi.farnell.com/multicomp/11-99-8819/computer-cable-usb2-0-1-8m-white/dp/2444241>

Jumper wires

<https://fi.farnell.com/multicomp/mcbbj65/jumper-wire-assortment-65pcs/dp/2396146>

Tactile Switch

<https://fi.farnell.com/omron/b3wn-6002/switch-pcb-spno/dp/9945423?ost=9945423>

Trimmer pot

<https://fi.farnell.com/vishay/m63m103kb30t607/trimmer-pot-10k-1turn-thd/dp/9608230?ost=9608230>

RGB LED

<https://fi.farnell.com/kingbright/l-154a4surkqbdzgw/led-multi-colour-rgb-5mm/dp/2290374?st=rgb%20led>

LED red

<https://fi.farnell.com/vishay/vlcs5830/led-aec-q101-5mm-red-65cd-624nm/dp/2889660>

LED green

<https://fi.farnell.com/kingbright/l-53lgd/led-low-current-5mm-green/dp/1142561>

Resistor 220 ohm

<https://fi.farnell.com/multicomp/mcf-0-25w-220r/res-220r-5-250mw-axial-carbon/dp/9339299>

Resistor 100 ohm

<https://fi.farnell.com/multicomp/mcf-0-25w-100r/res-100r-5-250mw-axial-carbon/dp/9339043>

Resistor 180 ohm

<https://fi.farnell.com/multicomp/mf25-180r/res-180r-1-250mw-axial-metal-film/dp/9341420>

Resistor 270 ohm

<https://fi.farnell.com/multicomp/mcf-0-25w-270r/res-270r-5-250mw-axial-carbon/dp/9339353>

Resistor 330 ohm

<https://fi.farnell.com/multicomp/mcf-0-25w-330r/res-330r-5-250mw-axial-carbon/dp/9339418>

Resistor 10 kohm

<https://fi.farnell.com/multicomp/mcf-0-25w-10k/res-10k-5-250mw-axial-carbon-film/dp/9339060>

Resistor 4.7 kohm

<https://fi.farnell.com/multicomp/mcf-0-25w-4k7/res-4k7-5-250mw-axial-carbon-film/dp/9339540>

LDR

<https://fi.farnell.com/advanced-photonix/nsl-19m51/light-dependent-resistor-550nm/dp/3168335?st=photoresistor>

Speaker

<https://fi.farnell.com/cqr-components/speaker-miniature-2-5-64ohm/speaker-64ohm-0-3w-60mm/dp/599268?st=speaker%2064%20ohm>

Temp sensor

<https://fi.farnell.com/maxim-integrated-products/ds18b20/temperature-sensor/dp/2515553?st=ds18b20>

A multi-meter is also necessary when building circuits! Check the video tutorial in the MyCourses/Materials section on multi-meters.