

Bill of materials

Notes about the microcontroller

This project is based on the microcontroller [Arduino Nano 33 BLE Sense](#). Please don't confuse it with the similarly named [Arduino Nano 33 BLE](#) :)

The microcontroller is sold with and without headers and we recommend acquiring the one ***with headers***, so you can immediately start using it on a breadboard without needing to solder the headers on it.

Minimum materials

This is the list of minimum required materials for Tiny trainable instruments

| Item | Quantity | Cost (USD) | Retailer | Comment |
|--|----------|------------|----------|-----------------|
| Arduino Nano 33 BLE Sense with headers | 1 | 33.40 | Arduino | Microcontroller |
| Breadboard | 1 | 5.95 | Adafruit | Prototyping |
| Jumper wires | 1 | 3.95 | Adafruit | Connections |
| Micro USB cable | 1 | 2.95 | Adafruit | Power |

Sound and movement outputs

These are the recommended materials for starters, and are taught in the workshop.

| Item | Quantity | Cost (USD) | Retailer | Comment |
|------------------------------|----------|------------|----------|-----------------|
| Piezo buzzer | 1 | 1.50 | Adafruit | Output sound |
| Micro servo | 1 | 5.95 | Adafruit | Output movement |

Additional outputs

These additional outputs include more expensive or more complex materials, and they are recommended for more advanced users. They are not covered on the beginner workshop, but are supported by the Tiny trainable instruments project and software library.

| Item | Quantity | Cost (USD) | Retailer | Comment |
|---------------------------------|----------|------------|----------|---------------------|
| LED | 1 | 6.95 | Adafruit | Output light |
| MIDI DIN | 1 | 1.75 | Adafruit | Output MIDI data |
| Thermal printer | 1 | 61.95 | Adafruit | Output printed text |

| Item | Quantity | Cost (USD) | Retailer | Comment |
|------------------------------------|----------|------------|----------|---------------|
| 128x32 OLED screen | 1 | 12.50 | Adafruit | Output screen |