**Components**

[AM2302 (wired DHT22) temperature-humidity sensor](https://www.adafruit.com/product/393)

[Adafruit HUZZAH ESP8266 Breakout](https://www.adafruit.com/product/2471)

|  |  |  |  |
| --- | --- | --- | --- |
| **Electronics** | | | |
| *Component* | *Qty* | *Cost* | *Total* |
| [Adafruit Si7021 Temperature & Humidity Sensor Breakout Board](https://www.adafruit.com/product/3251?gclid=Cj0KCQjwirz3BRD_ARIsAImf7LP5p4a4sHeOQ90-tOJ6HHysir9v6YcZk-dVU8PQFmlAhGOdAM3q6TIaAmh9EALw_wcB) | 3 | $8.95 | $26.85 |
| [Adafruit STEMMA Soil Sensor - I2C Capacitive Moisture Sensor](https://www.adafruit.com/product/4026) | 3 | $7.50 | $22.50 |
| [Adafruit Feather HUZZAH with ESP8266 - Loose Headers](https://www.adafruit.com/product/2821) | 3 | $16.95 (+$0.95 headers) | $50.85 (+$2.85) |
| [Adafruit TSL2591 High Dynamic Range Digital Light Sensor](https://www.adafruit.com/product/1980?gclid=Cj0KCQjwirz3BRD_ARIsAImf7LNSOH-NtMw1Bx4KJ786WwbRx8CNnUYmWHQMTV8mvDDgDijmK4F8sKIaAlwUEALw_wcB) | 3 | $6.95 | $20.85 |
| [Waterproof 3xAA Battery Holder with On/Off Switch](https://www.adafruit.com/product/771) | 3 | $3.95 | $11.85 |
| [22 AWG stranded wire](https://www.adafruit.com/product/2976) | 1 | $2.95 | $2.95 |
| [Wire stripper](https://www.adafruit.com/product/147) | 1 | $6.95 | $6.95 |
| [Solder](https://www.adafruit.com/product/2473) | 1 | $11.95 | $11.95 |
| **Waterproofing/Misc** | | | |
| *Component* | *Qty* | *Cost* | *Total* |
| Urethane seal | 1 | $11.99 | $11.99 |
| Tupperware covers | 1 | $8.29 | $8.29 |
| Plywood | 1 | $13.99 | $13.99 |
| **Total** | | | **$191.87** |

**Arduino**

Code for pulling data from sensors

* Must have’s – temperature/humidity, light, soil moisture
  + [How to use soil moisture sensor](https://create.arduino.cc/projecthub/MisterBotBreak/how-to-use-a-soil-moisture-sensor-ce769b)
* Nice to have’s – motion sensor/camera
  + [ESP32 Camera programmed using Arduino](https://www.youtube.com/watch?v=xvjRlBHmewY)

[Arduino time library](https://playground.arduino.cc/Code/Time/)

**Arduino 🡪 Firebase**

[FirebaseArduino git](https://github.com/FirebaseExtended/firebase-arduino)

[Sending Temperature and Humidity sensor data to Firebase Real-Time Database using NodeMCU ESP8266](https://circuitdigest.com/microcontroller-projects/sending-temperature-and-humidity-data-to-firebase-database-using-esp8266)

[How to use Firebase Realtime Database in React](https://www.robinwieruch.de/react-firebase-realtime-database)

[HTTP requests in Arduino](https://randomnerdtutorials.com/esp32-http-get-post-arduino/)

[Using Firebase to control your Arduino project over the web](https://medium.com/firebase-developers/using-firebase-to-control-your-arduino-project-over-the-web-ba94569d172c)

[Connecting to Firebase Realtime Database from Arduino using ESP8266 module](file:///Users/feyisope/Documents/GitHub/eweje-garden/Connecting%20to%20Firebase%20Realtime%20Databse%20from%20Arduino%20using%20ESP8266%20module)

**Firebase**

[Create custom tokens](https://firebase.google.com/docs/auth/admin/create-custom-tokens#c++)

[Add the Firebase Admin SDK to your server](https://firebase.google.com/docs/admin/setup#initialize-sdk)

[Authenticate with Firebase Using a Custom Authentication System and C++](https://firebase.google.com/docs/auth/cpp/custom-auth)

[Add Firebase to your C++ project](https://firebase.google.com/docs/cpp/setup#note_select_platform)

[Setting database rules](https://docs.sketchware.io/docs/firebase-database.html)

[JSON generator](http://www.objgen.com/json)

Read and write data on the web

**Firebase 🡪 React**

[A Firebase in React Tutorial for Beginners](https://www.robinwieruch.de/complete-firebase-authentication-react-tutorial)

[Firebase as a simple database to a React app](https://sebhastian.com/react-firebase-real-time-database-guide)

\*\*\*\*[React-Firebase library](https://react-firebase-js.com/)

**React**

[Create React app](https://reactjs.org/docs/create-a-new-react-app.html)

\*\*\*\*[MaterialUI](https://material-ui.com/)

\*\*\*\*[React, Chart.js (git repo)](https://github.com/jerairrest/react-chartjs-2)

[How to use chart.js to create charts in React](https://www.educative.io/edpresso/how-to-use-chartjs-to-create-charts-in-react)

[Customizing Chart.JS in React](https://blog.bitsrc.io/customizing-chart-js-in-react-2199fa81530a)

[Near Real Time Graphs with charts.js and firebase real time database](https://medium.com/@kanwarb/near-real-time-graphs-with-charts-js-and-firebase-real-time-database-e8cc4dffb88c)

[Charts.js](https://www.chartjs.org/)

[Create react component](https://www.npmjs.com/package/react-create)

\*\*\*\*[Generate React CLI docs](https://www.npmjs.com/package/generate-react-cli)

[Storing JSON data in React with setState](https://medium.com/@brettcelestre/storing-json-data-in-react-with-setstate-3b588b74dcce)

[Rendering state JSON in React](https://stackoverflow.com/questions/47316338/rendering-state-json-in-react)

[Setting state from firebase database info in react js](https://stackoverflow.com/questions/55134187/setting-state-from-firebase-database-info-in-react-js)

[React Component](https://reactjs.org/docs/react-component.html)

**Backend**

<https://www.sensingthecity.com/sending-data-to-firebase-with-the-esp8266-wifi-module/>

[Connecting Arduino to Firebase to Send & Receive Data](https://www.instructables.com/id/Connecting-Arduino-to-Firebase-to-Send-Receive-Dat/)

<https://create.arduino.cc/projecthub/electropeak/connecting-arduino-to-firebase-to-send-receive-data-cd8805>

<https://medium.com/@angakoko/connecting-to-firebase-realtime-databse-from-arduino-using-esp8266-module-4314441406ed>