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CESA STEM weather station challenge

Explanation of kit

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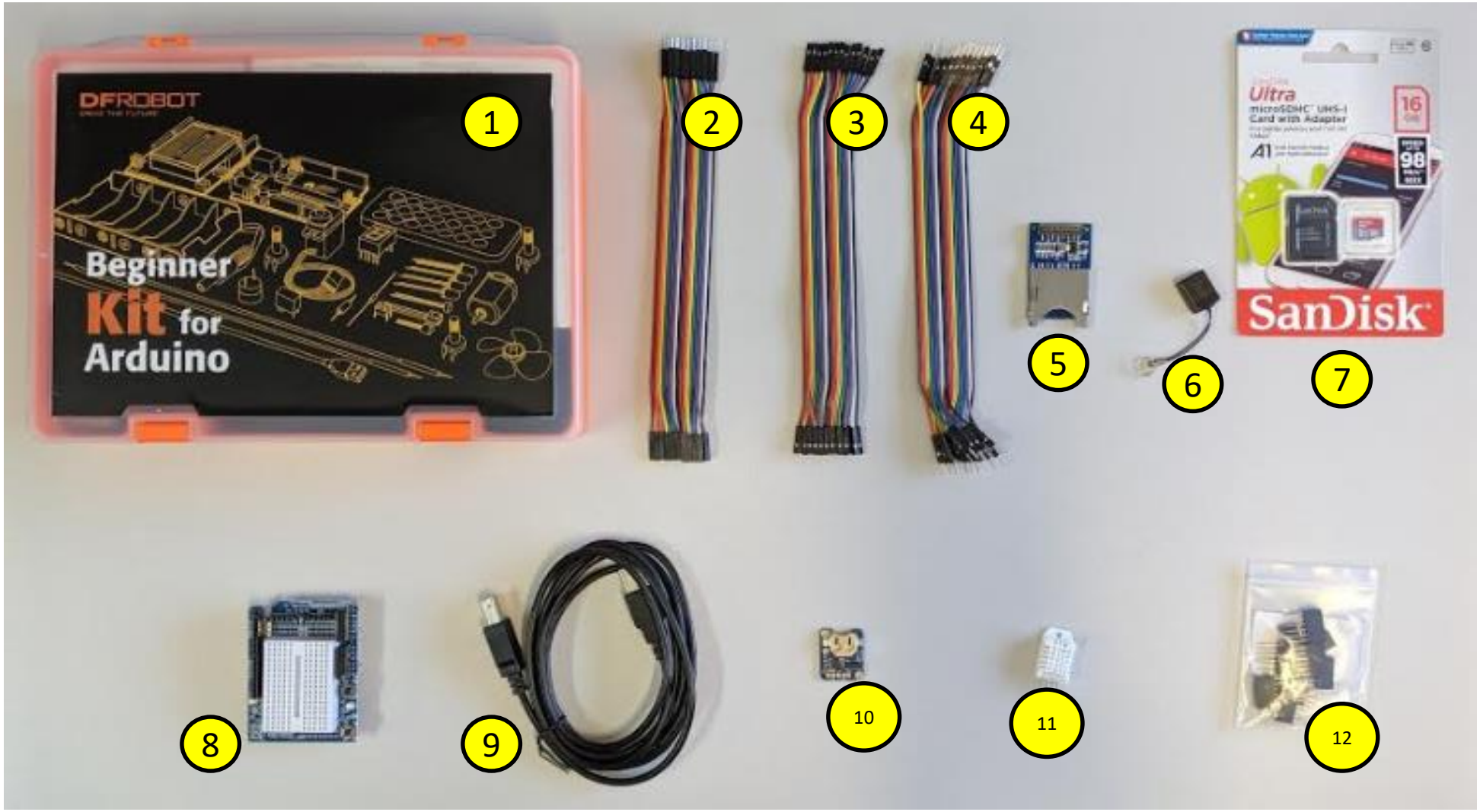

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* Battery not included.

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Arduino Starter Kit

The starter kit has many electrical component including the Arduino Uno microcontroller. The Arduino is the engine behind your weather station.

The kit has introductory tutorials which may be a scaffolding activity for your students.

Arduino Uno

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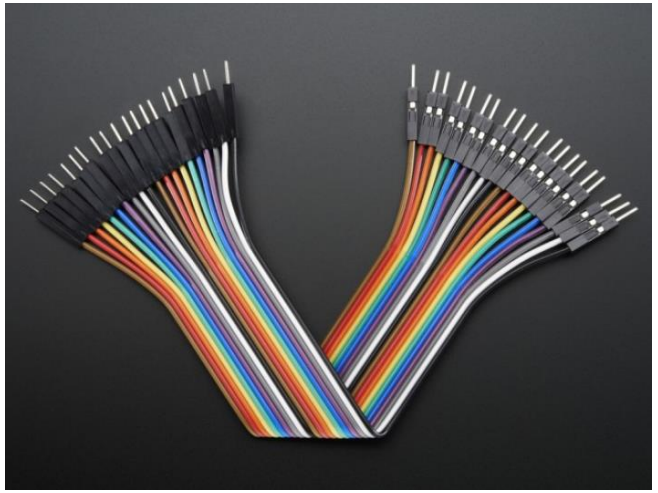
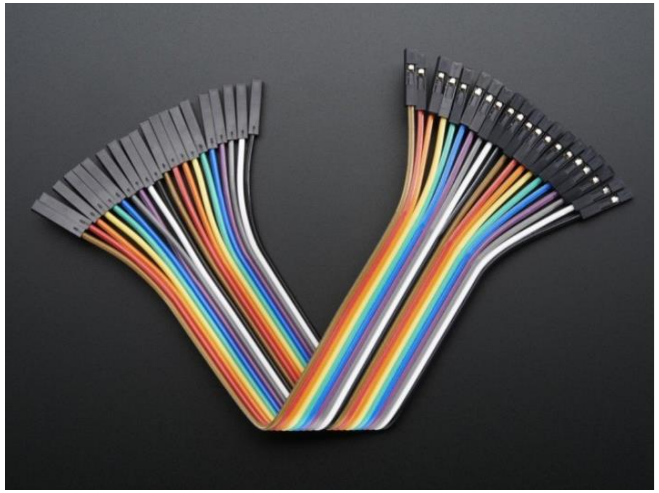
Jumper wires





Jumper wires allow for solderless connections between electrical components. For example, between the Arduino and the DHT22 Temp./Humidity Sensor.

Each kit includes Male/Male, Female/Male and Female/Female type connections.

SD Card Module

The SD Card Module allows for the Arduino to log the weather recordings to a csv file.

It has 8 pins to connect to, 5 of which you will need for the weather station. It is important to read the manual to understand each pin.

Manual Link

MicroSD Card and Reader

MicroSD Card and MicroSD Card Reader for students to record their data and transfer to their computer.

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ProtoShield + Mini Breadboard for Arduino

Shields are designed to sit on top of an Arduino board, simplifying its interface and making it easier to prototype and work within a small space with multiple wires.

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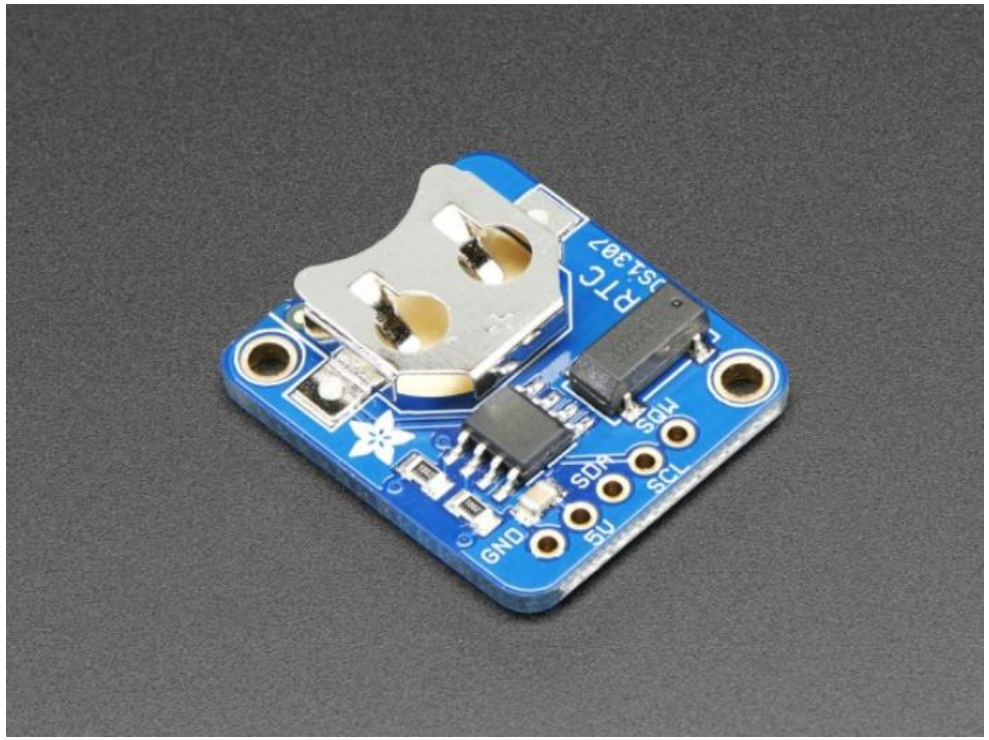
USB Cable A to B (1.8M)

The weather station requires power, be that through a battery pack or mains. This extension cable will provide flexibility when connecting to a power point.

Real Time Clock



When a weather station logs a recoding, the Real Time Clock will ensure it logs at the correct time. It requires a battery (not included) to maintain the correct time when power is lost to the Arduino.

It is important to read the manual to understand each pin.

Manual

Battery type

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DHT22 Temperature and Relative Humidity Sensor Module

Humidity and Humidity sensor compatible for Arduino.

Manual

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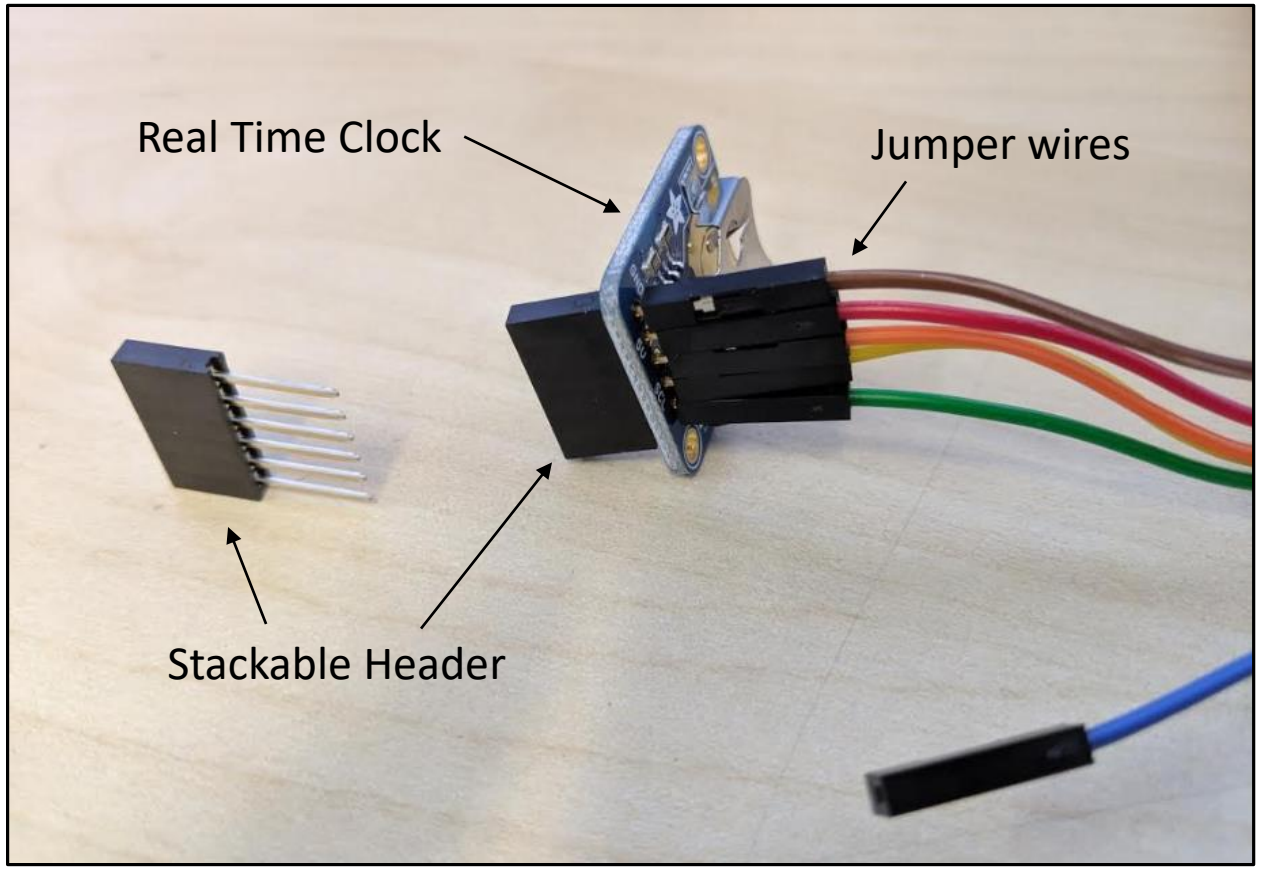
Stackable Header – 6 Pin



The Real Time Clock has a through hole connection, which can make it difficult to secure Jumper Wires.

If students are feeling adventurous, pins can also be soldered to strengthen the connection.

How to solder Header Pins