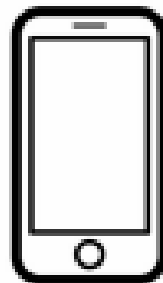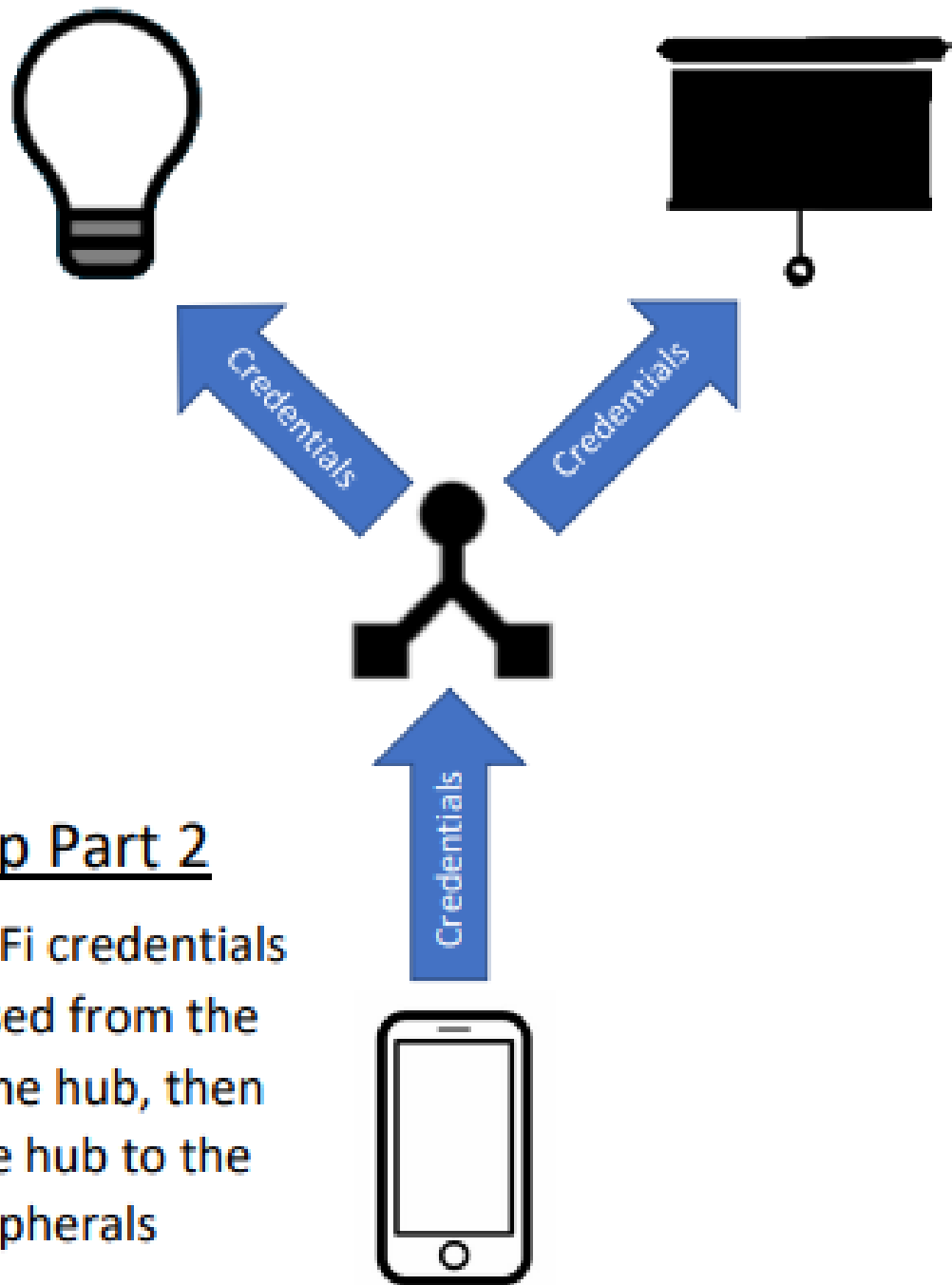## Setup Part 1
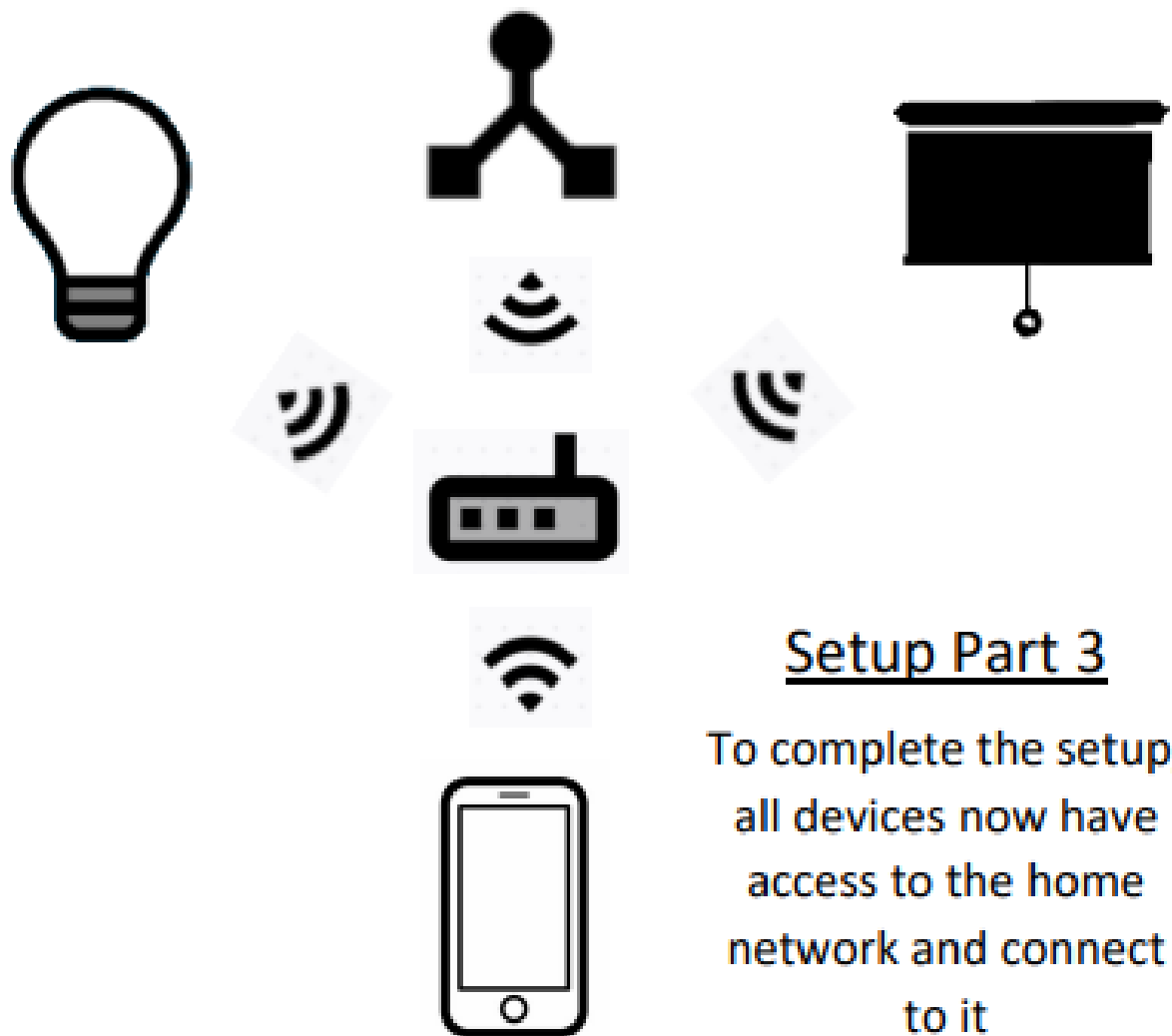
Hub broadcasts as WiFi Access Point, app and peripherals connect using **ESP8266**

Setup Part 2

Home WiFi credentials are passed from the app to the hub, then from the hub to the peripherals

Setup Part 3

To complete the setup, all devices now have access to the home network and connect to it
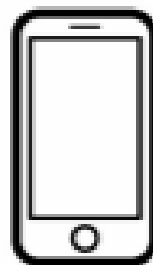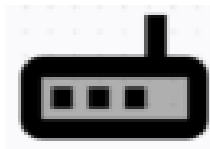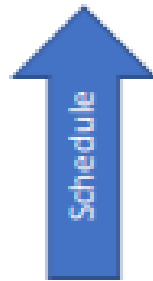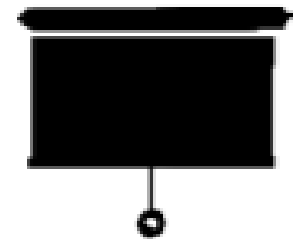
Operation

The app can send either an entire schedule or an immediate action through the home network to be performed, both of which are received by the Hub
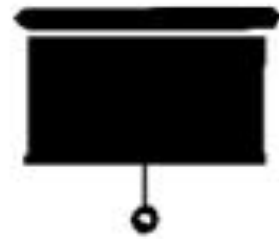
Operation

The Hub sends actions at specified times to the peripherals through the home network

5V DC from Micro-USB

ESP8266   control →   Indicator Lights

RTC   Light Sensor

```
                    [Light Bulb Icon]

                 ┌─────────────────────┐
                 │   120V From Wall    │
                 └─────────────────────┘
                           │
                           ▼
                 ┌─────────────────────┐
          ┌──────│ 24V DC Power Supply │──────┐
          │      └─────────────────────┘      │
          │                │                  │
          │                ▼                  │
          │      ┌─────────────────────┐      │
          │      │ Buck Converter      │      │
          │      │ (24V→5V)            │      │
          │      └─────────────────────┘      │
          │                │                  │
          │                ▼                  │
          │      ┌─────────────────────┐      │
          │      │ ESP8266 WiFi Module │      │
          │      └─────────────────────┘      │
          │       POWER  CONTROL  POWER        │
          ▼         ▼      ▼        ▼          ▼
  ┌─────────────────┐           ┌─────────────────┐
  │ Transistor Switch│          │ Transistor Switch│
  └─────────────────┘           └─────────────────┘
          │        ┌─────────────────┐     │
          │        │ Indicator Lights│     │
          ▼        └─────────────────┘     ▼
  ┌─────────────────┐           ┌─────────────────┐
  │ Cool White LEDs │           │ Warm White LEDs │
  └─────────────────┘           └─────────────────┘
```

120V From Wall

↓

24V DC Power Supply

↙ ↘

Buck Converter (24V→5V)   A4988 Driver

↓   control ↗   ↓

ESP8266 WiFi Module   NEMA17 Stepper Motor

control ↓   ↓

Indicator Lights   Window Shade