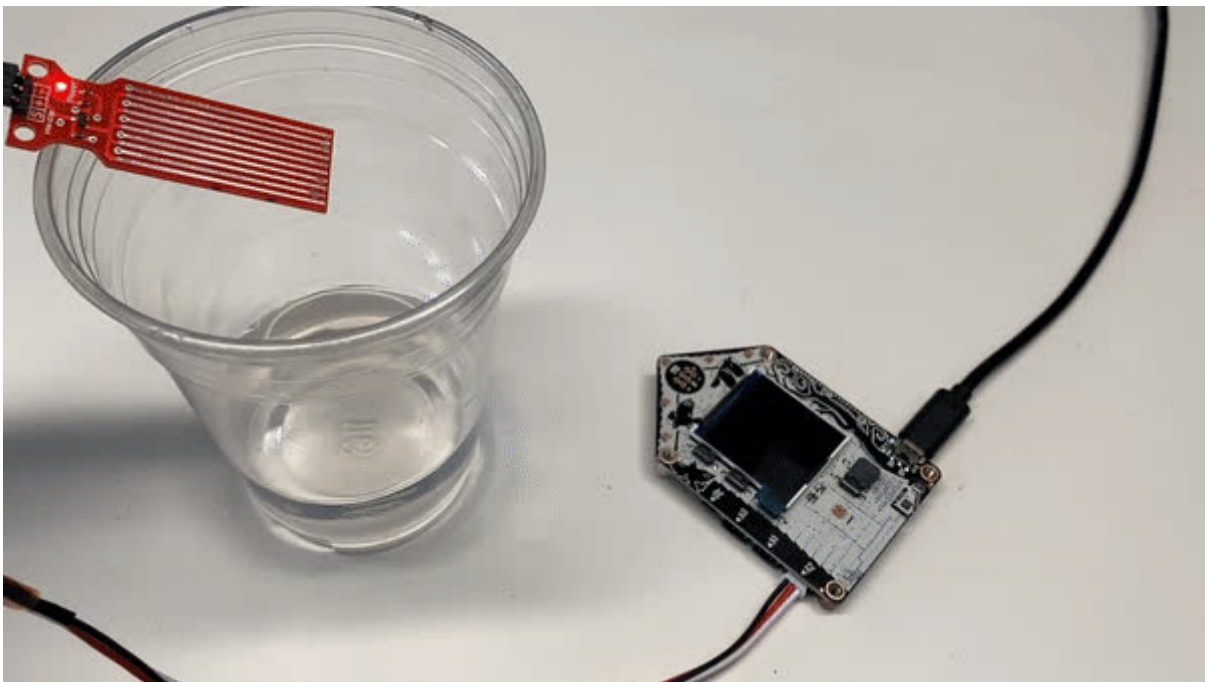




# No-Code WipperSnapper Water Detection

Created by Isaac Wellish



<https://learn.adafruit.com/water-detection-with-wippersnapper>

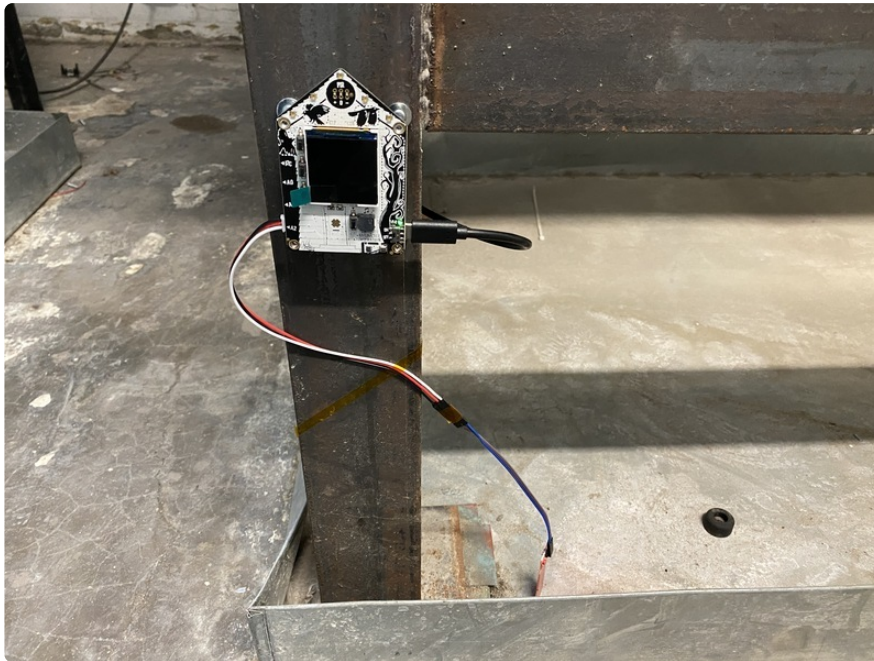
Last updated on 2024-06-03 03:29:44 PM EDT

# Table of Contents

<b>Overview</b>	<b>3</b>
<ul style="list-style-type: none"><li>• Prerequisite Guide:</li><li>• Project Materials</li><li>• Parts</li></ul>	
<b>Add the Water Sensor</b>	<b>7</b>
<ul style="list-style-type: none"><li>• How does it work?</li></ul>	
<b>Set Up the FunHouse</b>	<b>8</b>
<ul style="list-style-type: none"><li>• Set Up the Water Sensor</li><li>• Test the IR Sensor</li><li>• Troubleshooting the Sensor</li></ul>	
<b>Set Up Email Notifications</b>	<b>11</b>
<ul style="list-style-type: none"><li>• Create a New Action</li><li>• Test it Out</li><li>• Can't Upgrade to IO+?</li></ul>	
<b>Place the Sensor</b>	<b>13</b>
<ul style="list-style-type: none"><li>• Power</li></ul>	

---

# Overview



Is there a leak in the basement? Did a pipe burst? Is the AC dripping? Before you run down to check, what if instead you received an alert on your phone? Using an Adafruit FunHouse, a water sensor, and WipperSnapper, this can be accomplished in **minutes (and with no coding)!**



In this guide, we'll set up a water sensor inside Adafruit's factory. In the AC (Air Conditioning) room, the units drip lots of water in the summertime. We'll place our water sensor and FunHouse inside the room under one of the units, then if the floor is ever wet, the facilities team will get an email notification alerting the presence of

water. This will help prevent water damage before it's too late. And it can be done without a single line of code thanks to WipperSnapper and AdafruitIO.

## Prerequisite Guide:

**WipperSnapper** is an interface for [Adafruit IO, Adafruit's \(https://adafru.it/V5A\)incredibly easy-to-use IoT platform \(https://adafru.it/V5A\)](https://adafru.it/V5A), designed to turn any WiFi-capable board into an IoT device without programming a single line of code.

If you've never used WipperSnapper, click below to read through the Quickstart WipperSnapper guide before continuing.

**Quickstart: Adafruit IO  
WipperSnapper**

<https://adafru.it/Vfd>

## Project Materials

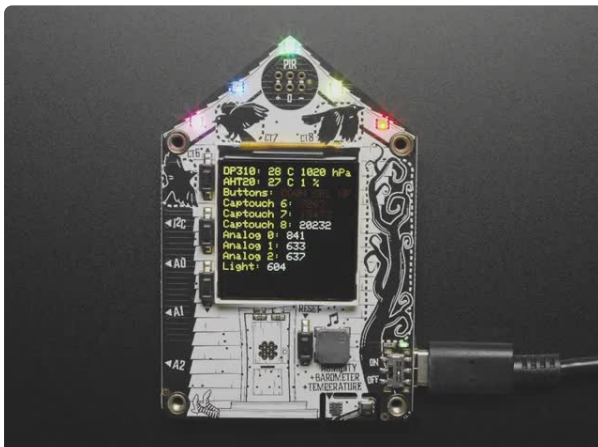
### Software:

In order to send email notifications within AdafruitIO, you will need an [AdafruitIO Plus account \(https://adafru.it/Eg3\)](https://adafru.it/Eg3). There are two options to choose from, a monthly or yearly membership. There is a way to do this project without a Plus membership but it is not recommended.

**Sign up for AdafruitIO Plus**

<https://adafru.it/Eg3>

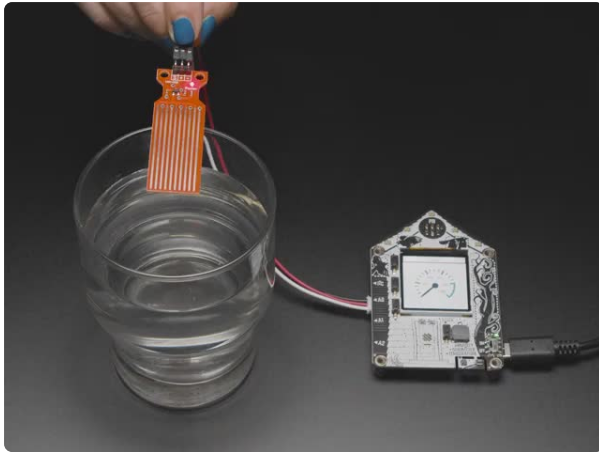
## Parts



### [Adafruit FunHouse - WiFi Home Automation Development Board](https://www.adafruit.com/product/4985)

Home is where the heart is...it's also where we keep all our electronic bits. So why not wire it up with sensors and actuators to turn our house into an electronic wonderland....

<https://www.adafruit.com/product/4985>



### Simple Water Detection Sensor with Digital Output

Keep wet things wet and dry things dry by detecting when the dry things get wet by accident! This palm-sized cherry-red water sensor is simple and easy to implement in your...

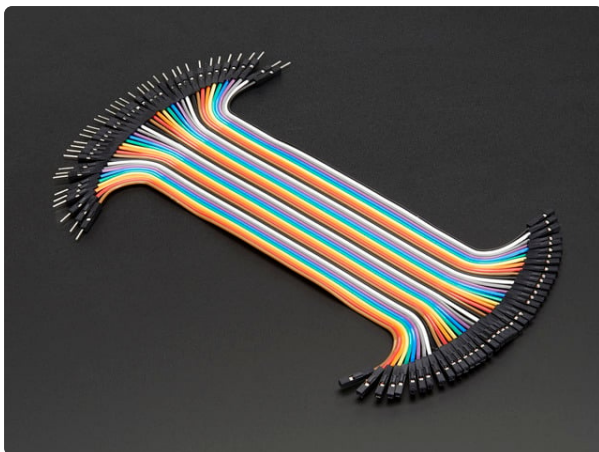
<https://www.adafruit.com/product/4965>



### STEMMA JST PH 2mm 3-Pin to Female Socket Cable - 200mm

This cable will let you turn a JST PH 3-pin cable port into 3 individual wires with high-quality 0.1" female header sockets on the end. We're carrying these to match up with...

<https://www.adafruit.com/product/3894>



### Premium Female/Male 'Extension' Jumper Wires - 40 x 6" (150mm)

Handy for making wire harnesses or jumpering between headers on PCB's. These premium jumper wires are 6" (150mm) long and come in a 'strip' of 40 (4 pieces of each of...

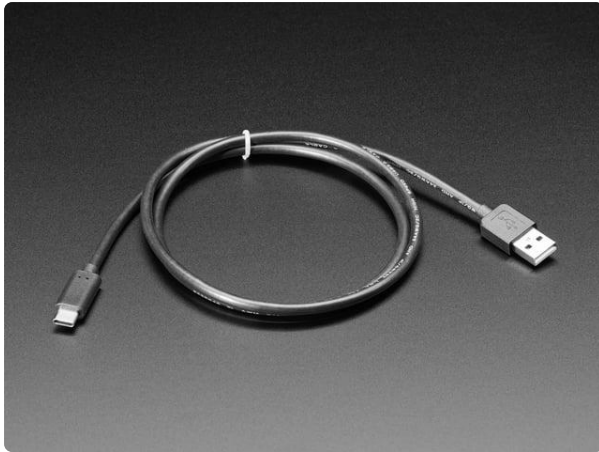
<https://www.adafruit.com/product/826>



### Mini Magnet Feet for RGB LED Matrices (Pack of 4)

Got a glorious RGB Matrix project you want to mount and display in your workspace or home? If you have one of the matrix panels listed below, you'll need a pack of these...

<https://www.adafruit.com/product/4631>



### USB Type A to Type C Cable - approx 1 meter / 3 ft long

As technology changes and adapts, so does Adafruit. This USB Type A to Type C cable will help you with the transition to USB C, even if you're still...

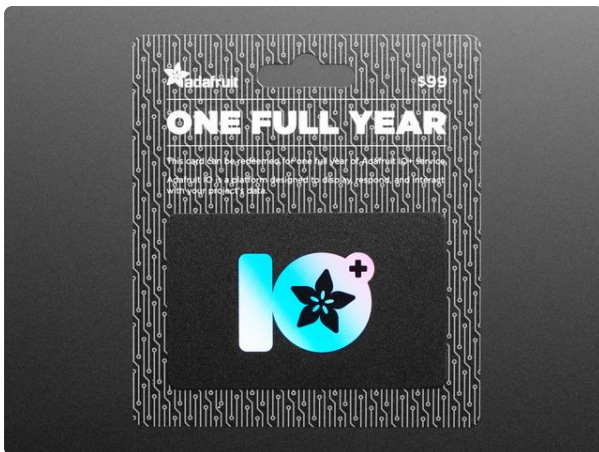
<https://www.adafruit.com/product/4474>



### 5V 2A Switching Power Supply w/ USB-A Connector

Our 5V 2A USB power adapter is the perfect choice for powering single-board computers like Raspberry Pi, BeagleBone, or anything else that's power-hungry! This adapter was...

<https://www.adafruit.com/product/1994>



### Adafruit IO+ 1 Year Subscription Card

It's the Internet of the Things! Adafruit IO+ is the easiest way to stream, log, and interact with your data. Whether you're...

<https://www.adafruit.com/product/3980>

#### Other materials:

- Scotch tape or similar
- Power extension cable
- Zip ties

---

# Add the Water Sensor

Plug the jumper extension cables into the pins of the water sensor. Connect the other ends of the jumper cable to the jumper end of the Stemma cable.

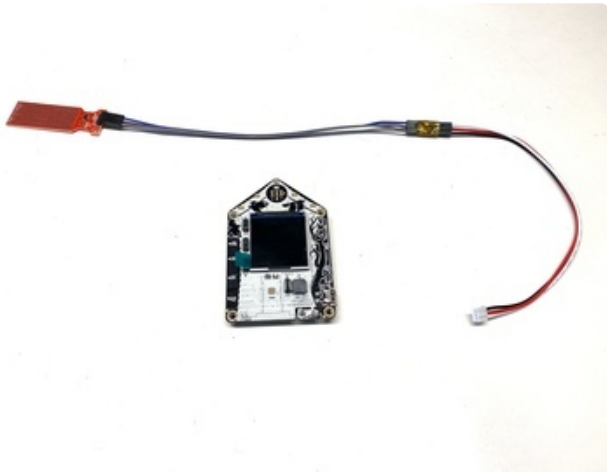


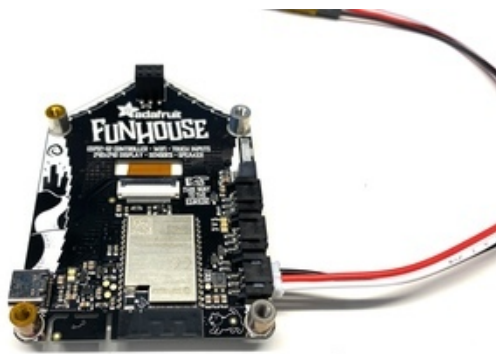
Be sure to connect the corresponding water sensor pins to the correct color of the stemma pins.

The (-) pin on the sensor connects to the **BLACK** cable from the stemma connector for **GND**

The (+) pin connects to the **RED** cable for **POWER**

The (S) pin connects to **WHITE** cable for **DATA**.





Plug the stemma cable into the **A2** slot at the bottom right side of the back of the board.

The front will have the input labeled as **A2**.



## How does it work?

The sensor has a very lightly biased transistor that is connected to two long sets of interlocking traces. When a little bit of water/condensation lands on the PCB and touches two of the traces, the transistor will turn on, setting the output pin high.

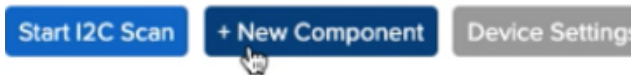
---

## Set Up the FunHouse

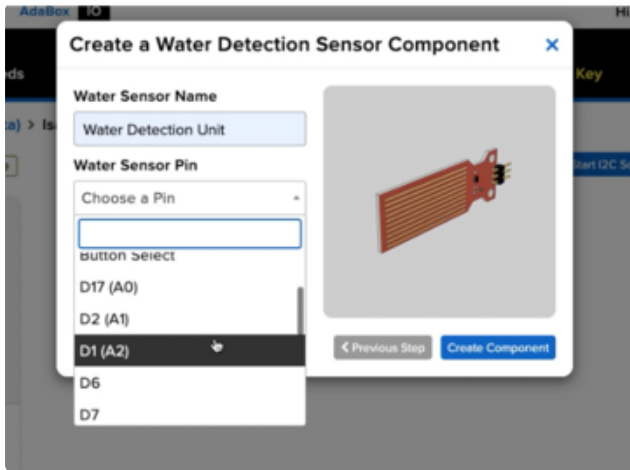
Step 1 is to get your Funhouse set up in the [Adafruit IO WipperSnapper page \(https://adafruit.io/WipperSnapper\)](https://adafruit.io/WipperSnapper). Follow the instructions in the [previously mentioned Quickstart guide \(https://adafruit.io/Vfd\)](https://adafruit.io/Vfd) to do this.



## Set Up the Water Sensor



From the WipperSnapper page, click "New Component"  
Select "Water Sensor"

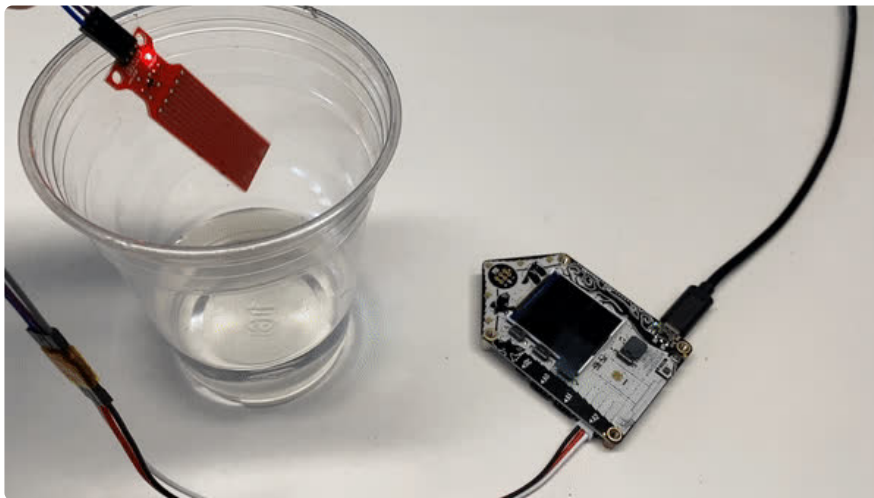


Name the sensor  
Choose **A2** from the drop-down list

## Test the IR Sensor

Next, test out the water sensor to verify it's working properly.

- Try dipping the tip of the sensor into a cup of water.
- Check the [WipperSnapper device page \(https://adafru.it/TAu\)](https://adafru.it/TAu) to see if the value changes from wet to dry for your sensor.



## Troubleshooting the Sensor

If you are not receiving feedback from the sensor verify the following:

- The sensor is correctly wired according to the directions on the "Add the Water Sensor" page
- The Stemma cable is connected to the **A2** pin on the FunHouse

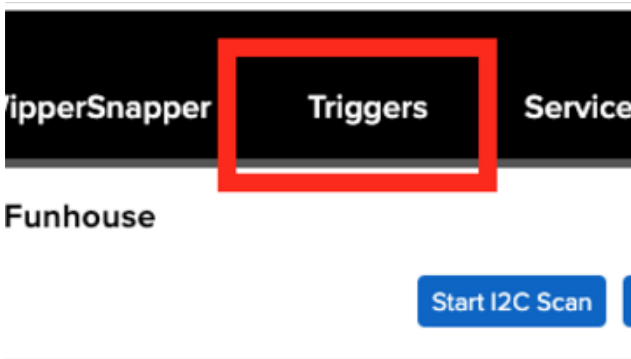
---

# Set Up Email Notifications

Now that we have the sensor set up, it is time to link it to an email to get notifications when there's a leak.

## Create a New Action

Triggers were renamed to Actions in Adafruit IO.



Funhouse

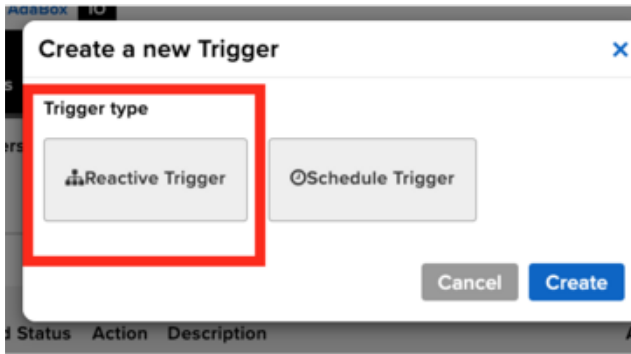
Start I2C Scan

isaacwellish > Triggers

+ New Trigger

Triggers

From the WipperSnapper device page, click the "Actions" selection from the navigation bar on the top of the page. Now click the "View All" link. Click "New Action" to add a new action.

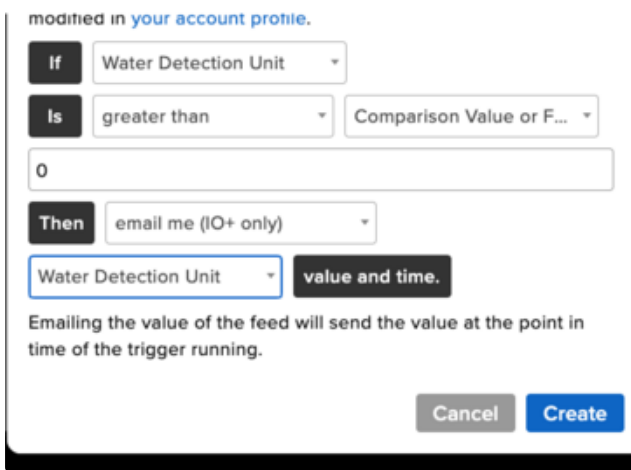


Select "Reactive Action" and hit create. For the "If" selection, pick the name of your water sensor.

Next choose "greater than", adding a 0 for the value below.

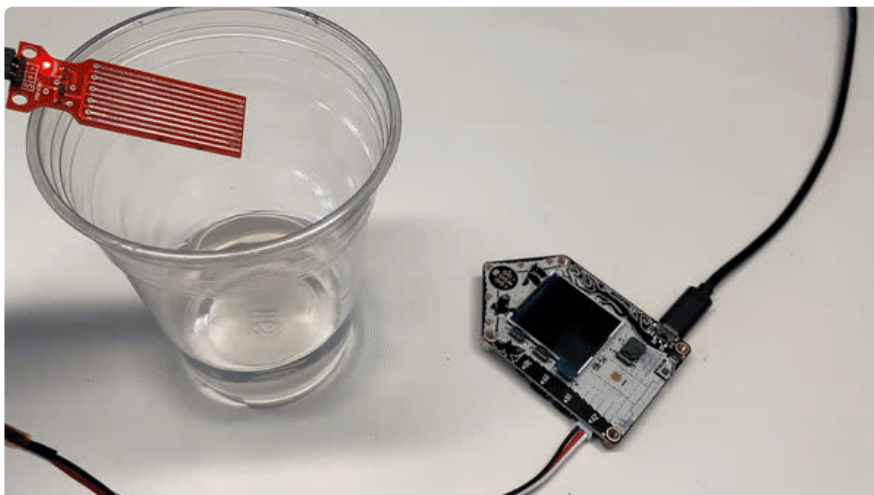
For the next section, choose "email me (IO+ only)"

Lastly, choose the name of the sensor again for the "value and time"



## Test it Out

Try dipping the sensor in the water again, and you should get an email!



## Can't Upgrade to IO+?

If you can't upgrade to IO+, you can use the website [If This Then That \(https://adafruit.it/iOe\)](https://adafruit.it/iOe) to send yourself an email when the sensor is triggered. The main downside is that the email does not reliably get sent at the moment the sensor is triggered. Sometimes there can be a delay of multiple hours or more, so it is not recommended.

---

## Place the Sensor

Find a good spot to place the sensor wherever you'd like to check for water.



In the summer in NYC, the AC in the building housing Adafruit can release quite a bit of water from under each unit. The metal barrier around the unit is designed to keep the water from leaking out and the white pump sucks out the water that's contained. On especially humid days in the summer, the water can sometimes overflow out of this chamber faster than the pump can handle. It will be helpful to have an alert system set up the moment water starts to pool so that any water damage from a potential overflow can be prevented quickly.



Here's a good spot to place the FunHouse. The magnetic feet that screw onto the back effectively hold the FunHouse where we'd like it.

## Power

After picking a good spot for the sensor, consider where the nearest outlet is. You will likely need an extension cable to power the sensor where you're planning to place it.

Try to avoid running the cable on the ground as any leaks may cause issues with power.



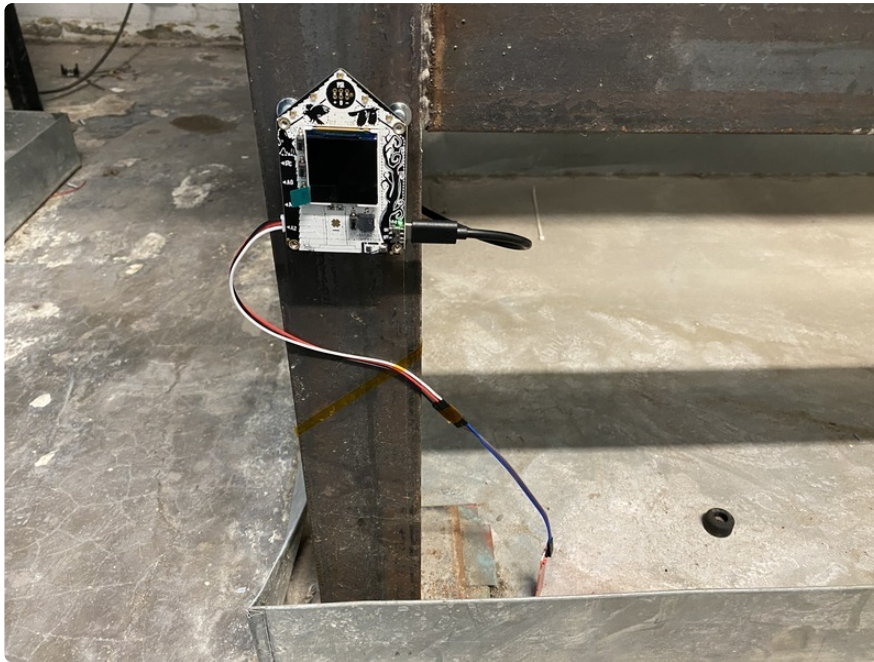
Once you know far it is from the outlet to your sensor, lay the extension cable down. Use zip ties to lock the cable in place.



Once the extension cable is in place, power up the FunHouse and zip tie the USB C cable in place.



Use some tape to position the sensor so that it is just touching the floor but is upright.



Once, it's all set up and powered on, make sure to check once more that the email system is working.

There you have it!