Measure Acceleration With Sound

Make the SPIKE Prime Hub play a tone that changes frequency based on acceleration. What will it sound like when you throw the hub up in the air?

Learning Objective:
Robotics, MicroPython, Physics

Tools:
LEGO SPIKE Prime, MicroPython Coding Environment

Getting Started

Try Reading the Accelerometer:

```
>>> hub.motion.accelerometer()
(-116, -9, 986)
```

Try Making the Hub Beep:

```
>>> hub.sound.beep()
```

Flip over for more details!

Build It

All you need is the SPIKE Prime Hub!

What do you expect to happen when you throw the hub in the air?

What will it sound like?

Code It

1. Make sure to import *hub* and *utime* at the beginning of your code
2. Next we want to create a loop for our program to run in
3. Now we want to read an acceleration value (just 1 not all 3) and set that value equal to the beep frequency

Sample Code

```
1 import hub, utime

2 while True:
3     f=hub.motion.accelerometer() #Gives accel. in X, Y, and Z
      f=f[2] #Pulls Z accel.
      hub.sound.beep(f, 500, 3) #Sets Z accel to frequency
```

Try changing which acceleration value you use. What happens?