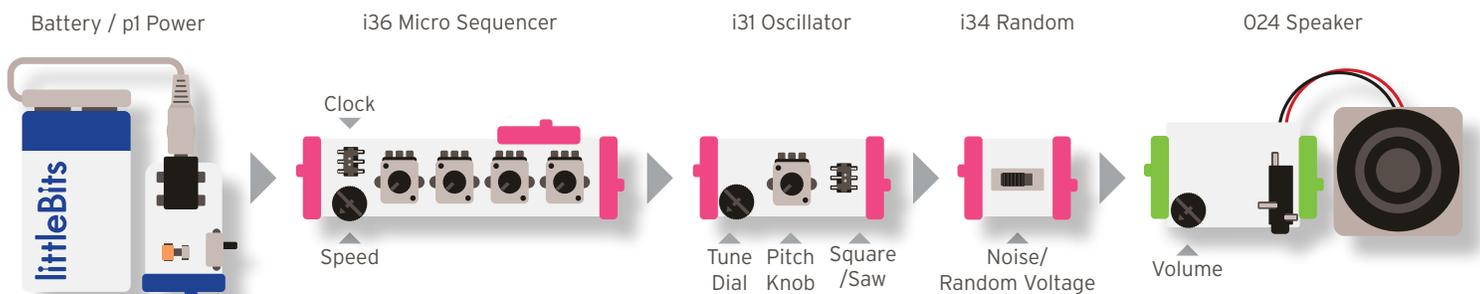


We've been using the **random** module to create white noise. Now we're going to use it to create random sounds.



Speed - to choose how fast the pitches will cycle through  
 Clock - to choose step (using a trigger) or speed (repeating)  
 Knobs - to choose pitches or silence  
 Tune dial - to match other instruments exactly

Pitch Knob - to make higher and lower sounds  
 Square/Saw - to choose between two kinds of sound  
 Random Voltage - to generate random sounds  
 Volume - to make the sound louder and softer

### Random Sounds.

Set the clock switch on the micro sequencer to "speed." When you switch on the power, the sequencer will begin cycling. The random module will send a random voltage to the oscillator as each note in the sequencer is played.

How does changing the oscillator's pitch knob change what is happening?

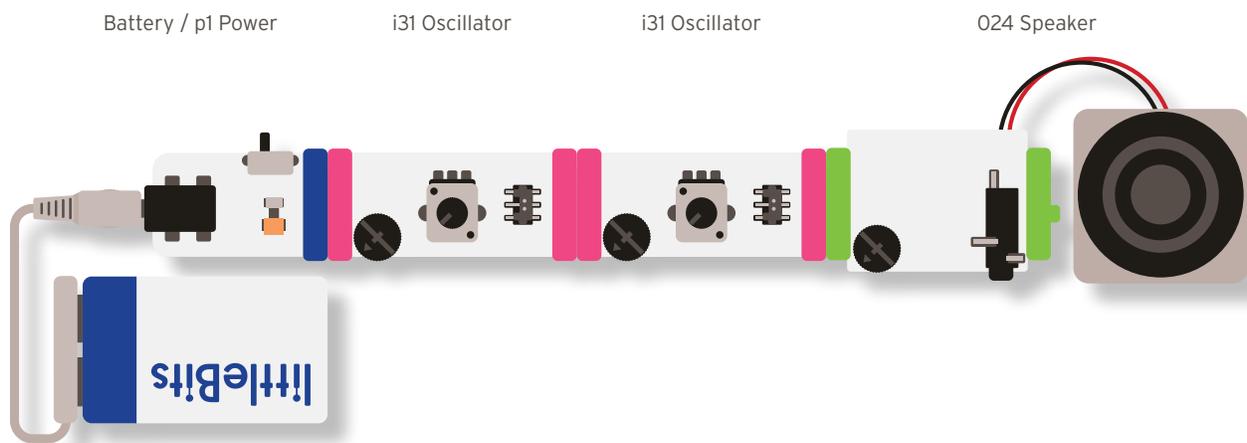
Does changing the sequencer's knobs have any effect?

Switch out the sequencer for the keyboard module. Pressing a button will send a random voltage to the oscillator.

Does changing the octave wheel on the keyboard change the sounds?

### What does the key mode switch do to the sounds?

Place the two oscillators together as shown below.



Turn on the power and explore the sounds that result from moving either or both of the oscillator's pitch wheels. You can generate a variety of sounds that many associate with space, computers, or video games. Be sure to switch the waveform between square and saw on each of the oscillators as you explore.

### Share what you've learned:

1. **Random Artwork** - You will need a blank sheet of paper and crayons or markers. Using the keyboard, random, and oscillator, play a random sound. If a high sound is played, draw a dot high on the page. If the sound is low, draw a low dot. Each time you push the button, draw a new dot to match the sound. Try different sizes of dots, circles, or other shapes. Try straight lines, wavy lines, angles, and whirls. Consider changing colors. Only you can decide when your random artwork is finished.
2. **Space Sounds** - Find a sound that you like using the two oscillators. Connect keyboard module to the power, and the two oscillators to the trigger out port on the keyboard. Now you can press any keyboard button to trigger the sound whenever you like. Try switching between "press" and "hold" for different effects. Use the space sound generator to make a short video with legos, action figures, or actors.