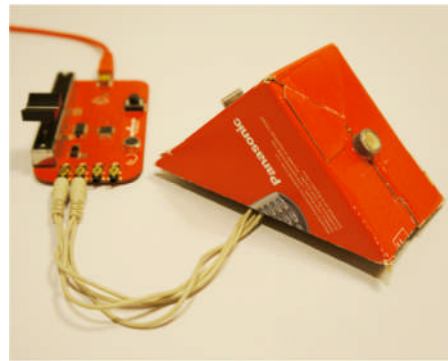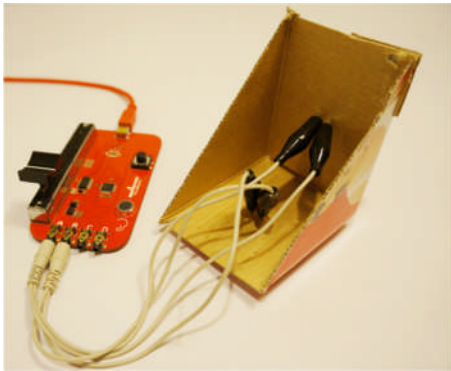# How to make a Light Sensor Instrument/Noisemaker

The light sensors can be used as a simple instrument/noisemaker, by setting the two sensors up so they are independent of each other, controlling two different aspects of one program. In this case note length and note pitch.

Ingredients: 1 cardboard box corner, 2 light sensors.

To begin with you need some form of structure with different angles to maintain the independence of the light sensors. I've used the corner of a cardboard box. Pierce the box with two holes per light sensor and settle them so they sit flat. Then connect them up to the picoboard.

To see the readings on the picoboard, right click on a sensor block and select 'show Scratch Board Watcher'

This is the program I used in order to create the sounds. In order to get a good range of notes, you may want to calibrate the notes to the sensor range.

Variable 1: Note Pitch - There are 25 notes, therefore I divided the measurement (a number between 0 and 100) by 4 and added 48 (the number of the first note available on Scratch)

Variable 2: Note Length - I subtracted the value from 100 so that the less light in, the shorter the note. I wanted the note lengths to be shorter for greater flexibility, so also divided this by 100.

For more of a challenge, try calibrating the scale to the amount of light your light sensor is taking in.
Or try controlling another dimension of your program using another sensor.

Safety: Please note that you use these resources at your own risk. Correct use of some components requires care.