The Laser Harp-Inator

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This science experiment was conducted to demonstrate the capability of creating various pitches of sound through the manipulation of lasers, photoresistors, circuitry, and a synthesizer. A wooden frame, designed to accommodate the span of twelve laser beams roughly four inches apart, was constructed. An 80mW laser was placed at the center of the base of the frame. A diffraction grating was placed on the laser to split the beam into twenty-four separate beams. To accommodate the width of a human hand, which will be needed to interrupt the beams, photoresistors were placed at the sight of every other beam. Each photoresistor was then separately wired to a breadboard which was connected to an arduino microcontroller. The arduino microcontroler was connected to a computer which was in turn connected to a midi synthesizer. By interrupting the beam of light to the photoresistor, causing a decrease in voltage, the arduino communicated to the synthesizer to create a predetermined pitch.

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