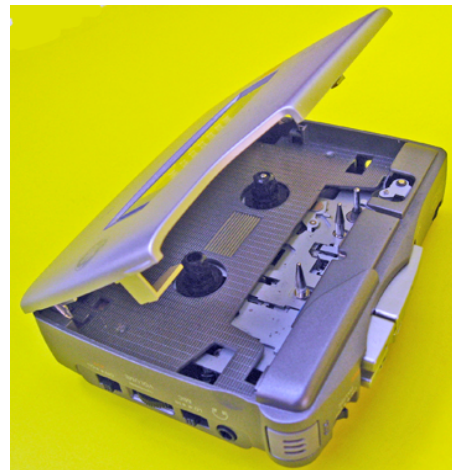
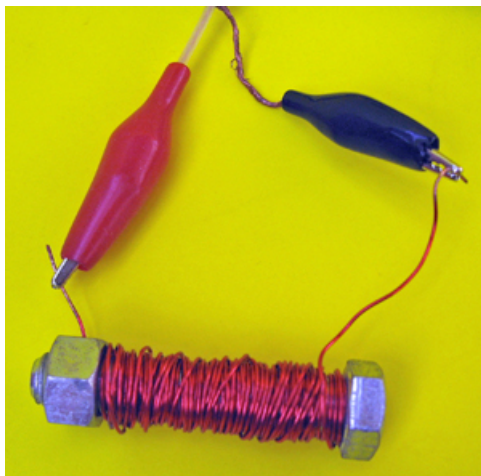


UPDATED MODULATED COIL & MODULATED LED

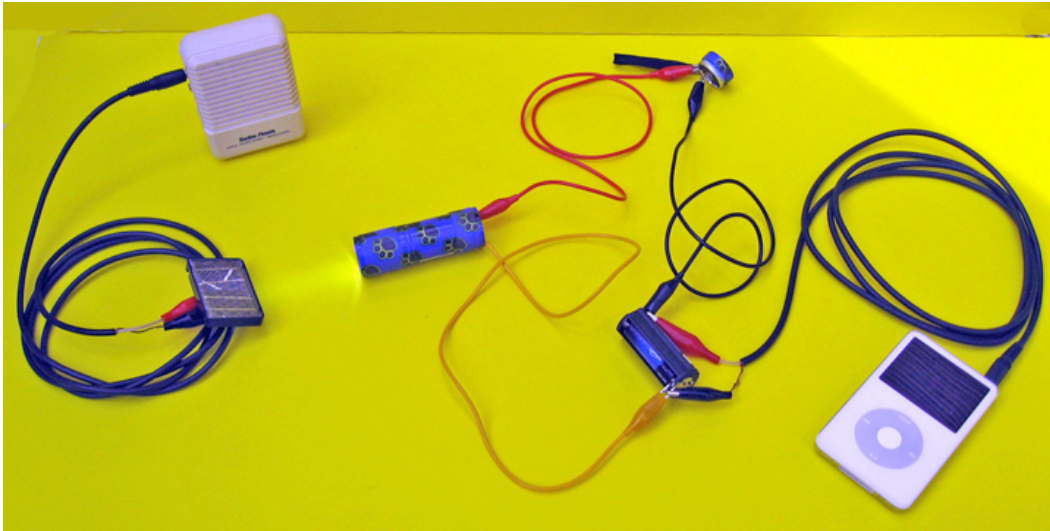
The original versions of Modulated Coil and Modulated LED can be found in Square Wheels, co-authored by Don Rathjen and Paul Doherty, published by the Exploratorium in 2002, pp. 49 and 51. They can also be found online at www.exploratorium.edu/square_wheels/modulated_coil.pdf , and www.exploratorium.edu/square_wheels/modulated_led.pdf

In recent years, the question has arisen of whether an iPod would work in place of the transistor radio used in the original versions. The answer is yes. The photos and comments below show an iPod replacing the transistor radio used in the original versions of both activities, and an LED flashlight replacing the LED, resistor and battery used in the original Modulated LED activity.

Modulated Coil



Modulated LED



The LED flashlight shown was purchased in March 2010 at a True Value Hardware store on sale for \$2.49. It uses 3 AAA batteries held in a battery pack. The battery pack has been removed from the flashlight body and is wired in series with the body and cap to complete the flashlight circuit (if the flashlight won't light, try reversing the battery pack -- battery polarity must be correct to allow current flow through the LED's). The iPod is then wired in parallel with the battery pack (polarity not a factor for this connection). See photos for overall scheme and details. Other flashlights with a different battery arrangement may require modified wiring details, but the general idea should remain the same. Thanks to Carl Ahlers for the idea of using the LED flashlight as an alternative to the LED, resistor and battery used in the original version.



Updated Modulated Coil & Modulated LED.....4/10/10

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