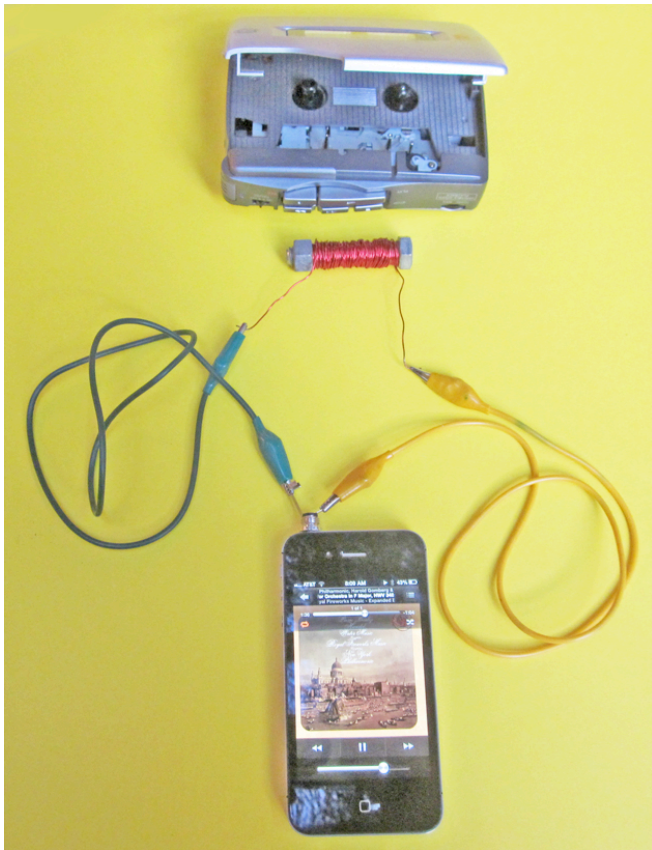


Modulated Coil Using an iPhone or iPod

Hear the Magnet

The original version of Modulated Coil can be found in Square Wheels, co-authored by Don Rathjen and Paul Doherty, published by the Exploratorium in 2002, p. 49. It can also be found online at www.exploratorium.edu/square_wheels/modulated_coil.pdf or at www.exo.net/~donr/activities/Modulated_Coil.pdf.

In the original version the earphone on a transistor radio is replaced by a coil of wire wrapped around a steel bolt. By holding the coil near the play head of a cassette tape recorder that is running but has no cassette inserted, music played on the radio can be heard from the speaker of the recorder. Additional details, including a brief "What's Going On" explanation can be found in the original version located online as noted above.



Over the years, the question has arisen whether an iPod or iPhone would work in place of the transistor radio used in the original version. The answer is yes. Figures 1 and 2 below show an iPhone and an iPod, respectively, replacing the transistor radio used in the original version.



Figure 2: iPod

Figure 1: iPhone

In Figure 2 above, a premade radio Shack cable is used to replace the jack and two alligator clip leads shown in Figure 1.

Figures 3, 4 and 5 below show close-ups of various aspects of the setup.



Figure 3: Coil

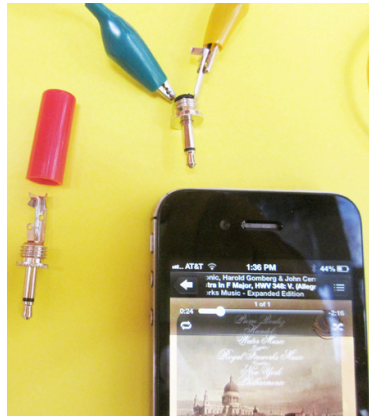


Figure 4: Jack

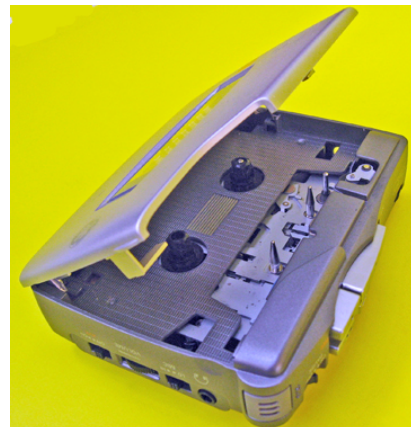


Figure 5: Cassette Recorder