Faraday's Induction

- If you put a wire in a magnetic field and then move the wire, an electrical current will flow in the wire – by a phenomenon called induction. (Fundamentals of a microphone)

- If you put a wire in a magnetic field and then cause the magnetic field to fluctuate (increase and decrease real fast), an electrical current will flow in the wire. Again, by induction.

- If you put an electrical current into a wire, a magnetic field will be created in space around the wire – by induction. (Fundamentals of a loudspeaker)

- If you cause an electrical current in a wire to fluctuate, the magnetic field will strengthen and weaken (or pulse) each time the current strengthens and weakens.

- If you cause the electrical current to fluctuate real fast, then each successive pulsing of magnetism will radiate off into space. (Radio broadcasting)

- Magnetism can radiate through space without a medium such as air.

- Magnetic waves radiate off into space at the speed of light (186,000 miles per second).

- The electrical current has to pulse at radio frequencies, or "RF," which start at about 100,000 pulses per second (Hz).

- WKBN-AM's signal radiates at 570,000 pulses per second. WHOT-FM's signal radiates at 101,100,000 pulses per second. WKBN-TV's signal pulses at 549,250,000 pulses per second. Your microwave oven pulses at 2,500,000,000 Hz.

- If you put a wire in a RF field of magnetic waves, an electrical current will flow in the wire (Radio reception).

- So the transmitting antenna is simply a wire in space, to which is applied a high frequency pulsing electrical current. Radio waves radiate from the antenna. In your automobile, your radio's antenna is simply a wire in space, by which pass high frequency pulses of magnetism. Electrical current comes out of the wire, and it is "processed" by your radio.

- If you put a wire somewhere in space where waves of magnetism happen to be radiating, the waves of magnetism will cause (by induction) pulses of electrical current to flow in the wire.