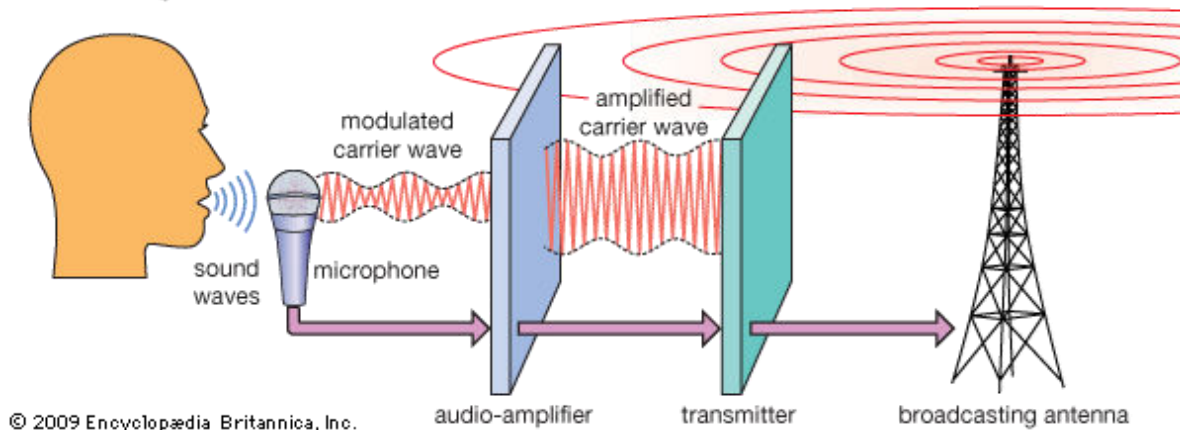


# Waves & the Electromagnetic Spectrum

## Section 5: Communicating with Radio Waves

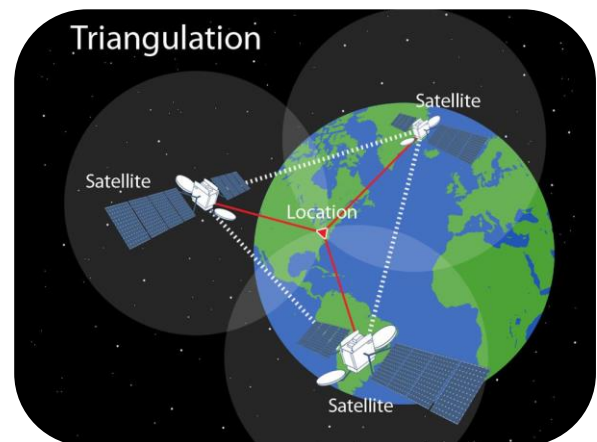
Transmitting Radio Waves



A radio converts electromagnetic waves into sound waves in a **radio transmission**. Each radio station is assigned a particular radio frequency for its broadcast. This specific frequency is called the **carrier wave**. Carrier waves can transmit a signal in one of two waves. Amplitude modulation (**AM**) broadcasts information by varying the amplitude of the carrier wave. Frequency modulation (**FM**) is when the radio varies the frequency of the carrier wave.

In television, audio is sent by FM radio waves, and AM radio signals send video. **Cathode-ray tubes** produce the images you see on tv. When struck by electron beams, the surface is covered by spots that glow red, green, or blue. **Telephones** use electrical signals that create a radio wave transmitted to and from a microwave tower.

**Global positioning system (GPS)** is a system of satellites, ground stations, and receivers that receive high-frequency microwave signals, amplify them and return them to earth. Today we use GPS when we travel to get us to our destination.



### Review:

1. What is a cathode-ray tube?
2. Explain the difference between AM and FM.
3. Explain how GPS works.