

# 10. Microphones and Loudspeakers (20th Century)

# Worksheet

The lecture is titled “Ubiquitous microphones and speakers” because (more than one answer):

* People prefer medical implants to amplify their voices
* Amplification is common place
* Microphones are inexpensive and available almost in every venue

Microphones are trans\_\_\_\_, converting soundwaves to an electrical signal. Microphones have a diaph\_\_\_\_\_ to receive the soundwaves and a moving coil that encodes the electrical signal.

A speaker is another name for a l\_\_\_\_\_\_\_. The reverse operation from the microphone now happens. The electric signal is now transformed into soundwaves through mag\_\_\_\_\_\_, coils, and flexible materials that make up the speaker.

The English scientist Michael F\_\_\_\_\_\_\_\_\_ is credited with discovering the loudspeaker. Alexander Graham B\_\_\_\_\_\_\_ then applied that technology to the first telephone.

Every cell phone has at least one m\_\_\_\_\_\_\_\_ and one s\_\_\_\_\_\_\_\_\_\_\_\_.