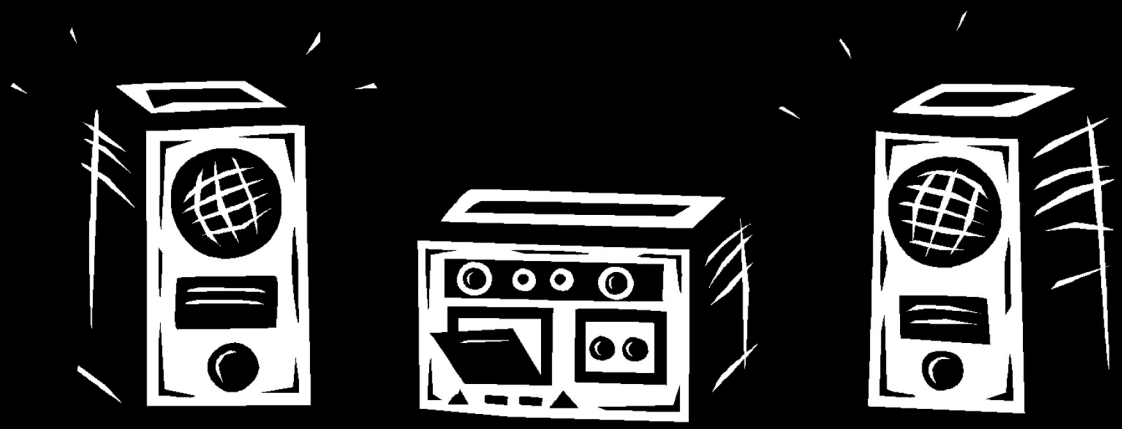
Basics of Audio



What is Sound?

Sound is the **oscillation of air particles** that create **waves of air pressure.**

Signal Path

Sound travels through 4 necessary components:

1) Input devices – **Source**
   - Microphone, Computer, iPod, etc
2) Mixer (Console) – **Combines sources**
3) Amplifier – **Increases signal strength**
4) Output devices – **Emits sound**
   - Speaker, Recorder, Headphones, etc.

Inputs

- Anything that creates a sound signal
  - Microphones, CD players, iPods, etc.
- Types of sound signals
  - Mic Level **(Lower Power)**
    - Microphones
    - Weaker signal
  - Line Level **(Higher Power)**
    - CD Players, iPods, etc.
    - Stronger signal

Mixers

- AKA: “Boards,” “Consoles,” or “Mixing Desks”

Act as the hub and brains of the signal path

- **Manipulate and combine multiple inputs**
- Sends signal to one or more **outputs**

Amplifiers

Amplifies the signal so that it is strong enough to power a speaker

- Different from guitar amps

Gain Structure

- Too much signal → Clipping (distorted audio)
- Too little signal → Noise Floor (residual hiss of circuits)

Output Devices

- Speakers – produce sound
  - Vibrate air to create sound waves
- Recording devices – record sound
  - CD or tape recorders

Signal Cables

Connect Input Device to Mixer and Mixer to Amplifier

Type	Common Uses	Picture
XLR	Microphone to Mixer, Mixer to Amplifier	
1/4”	Patch Cable, Guitar Cables	
1/8”	MP3 Players, Standard Headphones	
RCA	CD Players, DVD Players, VCRs	

QUESTIONS?