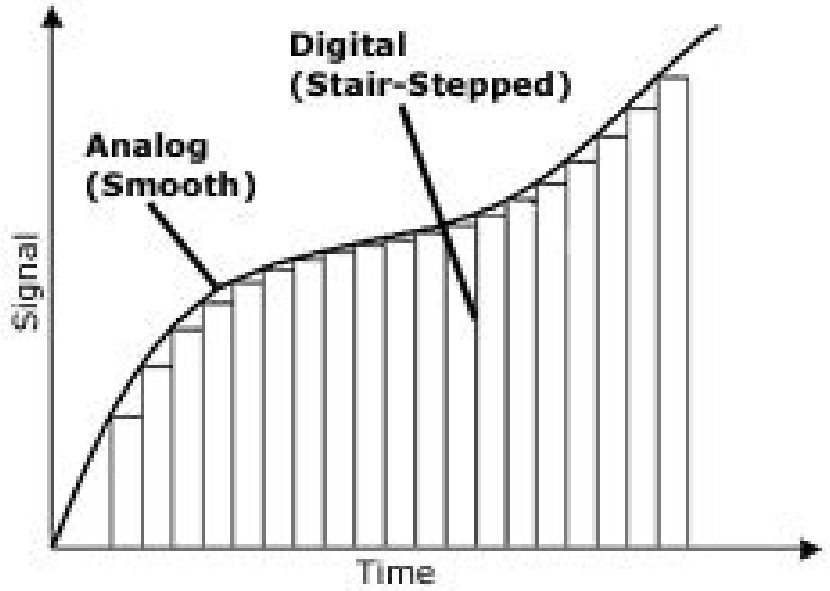
Sound

By Edon and Nikita

Analogue and Digital

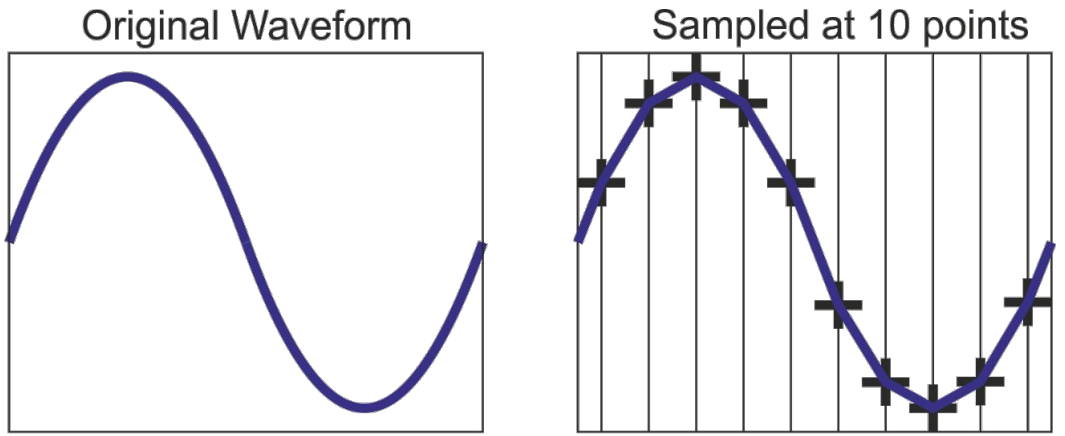
- Analogue: Smooth, any signal
- No sudden Jumps
- “Good” Quality

- Digital: Bar type
- Not smooth
- Sudden changes
- Jittery
- Worse quality



Sampling

- Done at intervals
- Not same quality
- Less Smooth
- Digital

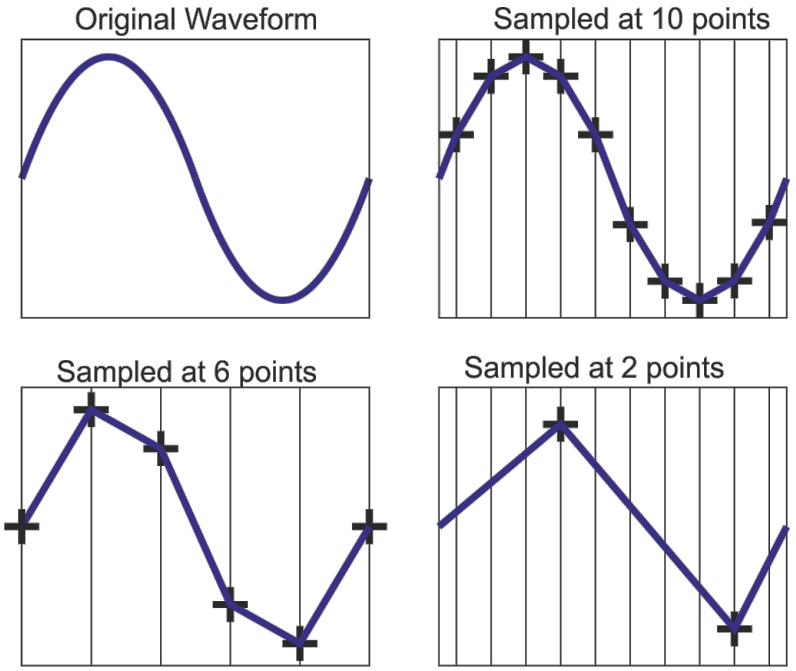


Sampling Rate

Sample rate is the number of samples of audio carried per second, and it determines the quality of the sound recorded.

-Measured in kHz or Hz

-Frequency depends on sampling rate



Bit Depth

Bit depth is the number of bits of information used for each sample.

- It corresponds to the resolution/quality of the audio.
- A CD uses 16 bits per sample, while a Blu-Ray or DVD use 24 bits per sample.
- Changes in bit depth result in changes in signal processing.

Sample Rate (kHz)	**Maximum Frequency** (kHz)
8	3.6
11.025	5
22.05	10
32	14.5
44	20
48	21.8
64	29.1
88.2	40
96	43.6

Compression and File Types

Compression:

- The reduction of sampling rate and transmission bandwidth to reduce storage.
- Lossy compression
  - MP3, Vorbis, Opus, Musepack
- Lossless compression
  - MPEG-4, MPEG-4 ALS, WavPack