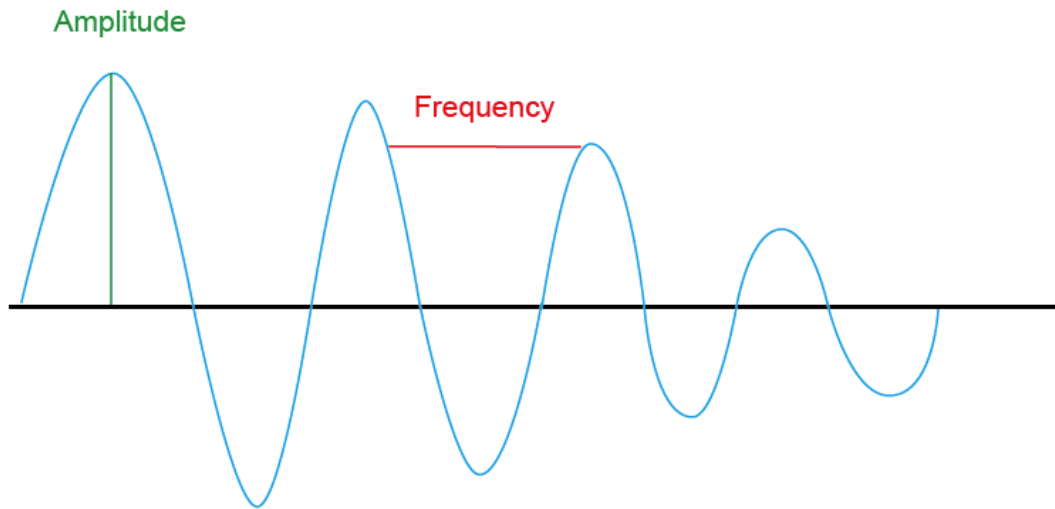


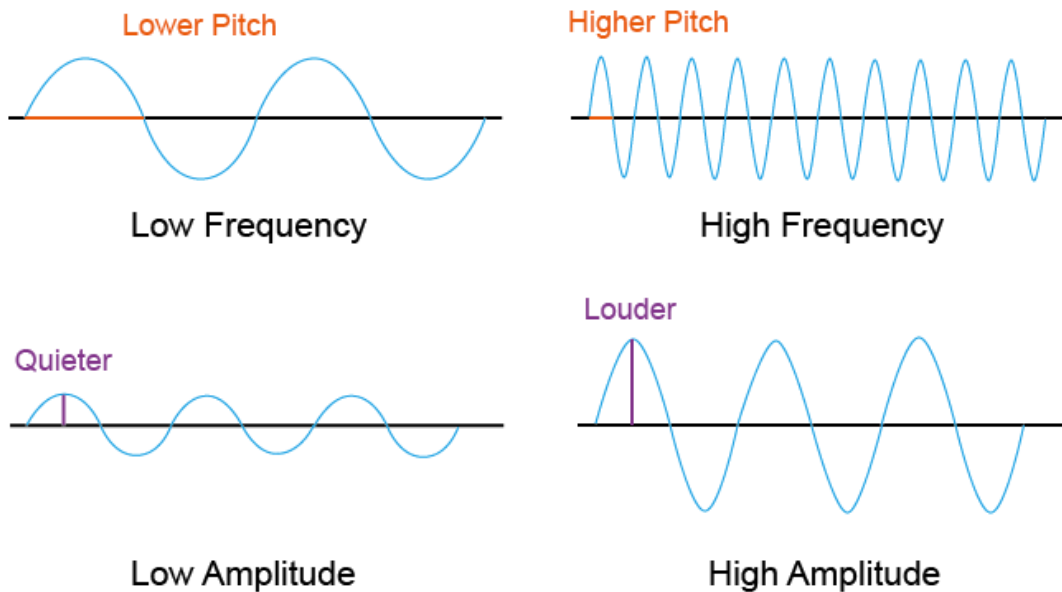
Binary Representation of Sound

Sound travels as a wave.



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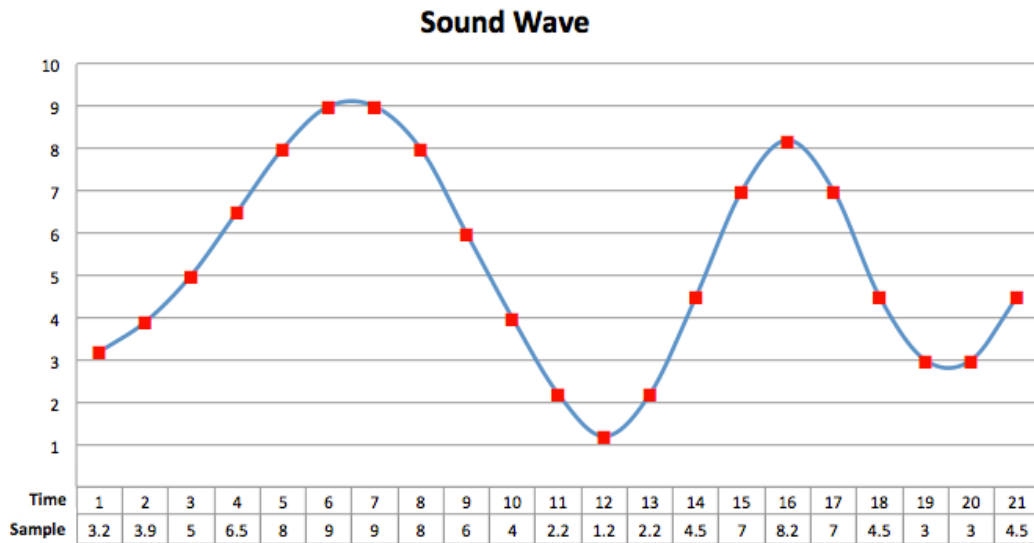
The amplitude controls how loud the sound is and the frequency controls the pitch.



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Sound waves are analogue. In order to store the waves digitally on the computer, we need to convert the waveform into a numerical representation so that the waveform can be stored in binary. To do this, we use an Analogue-to-Digital Convertor (ADC).

The ADC works by taking samples of the sound wave at regular intervals:



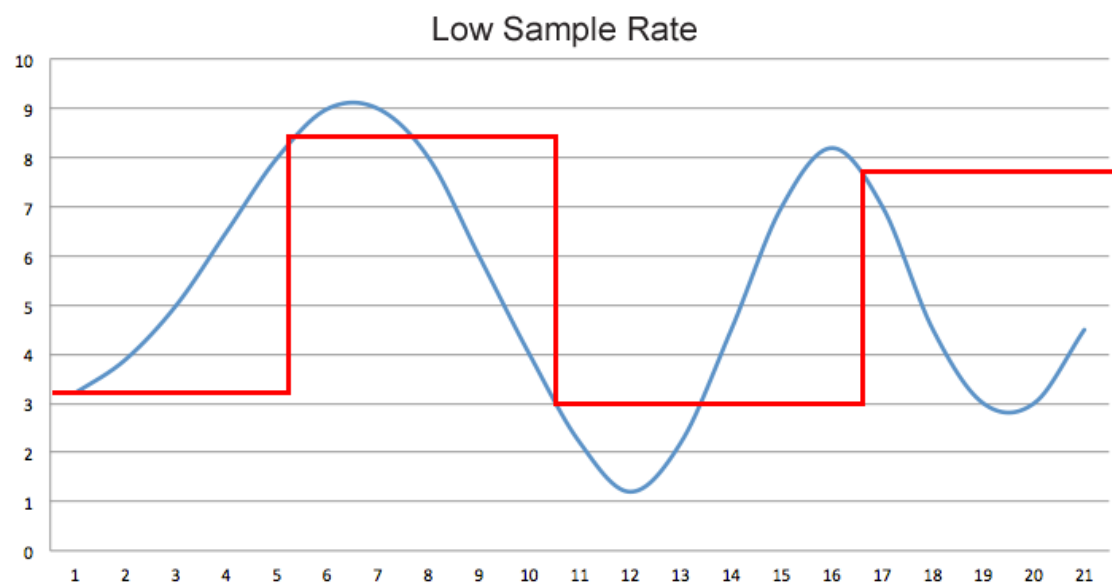
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Sound Quality

The quality and file size is affected by two factors - sample rate and bit rate.

Sample rate: The sample rate refers to the number of samples taken every second. The greater the frequency of the samples, the better the sound quality.

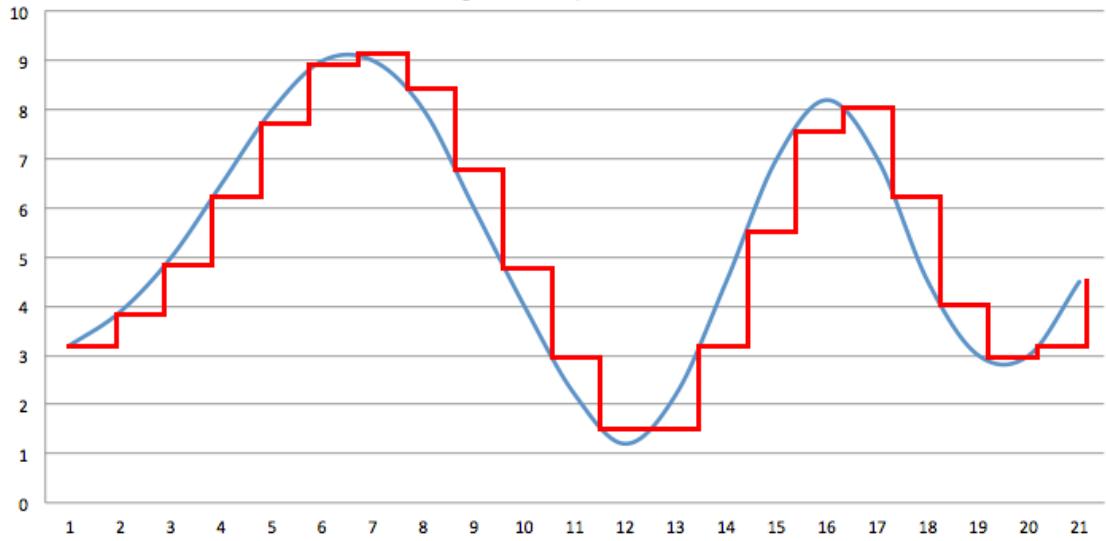
Bit rate: The bit rate refers to the number of bits used to store each sample. The more bits that are sampled, the better the accuracy of the file however, increasing the bit rate also increases the file size.



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High Sample Rate



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