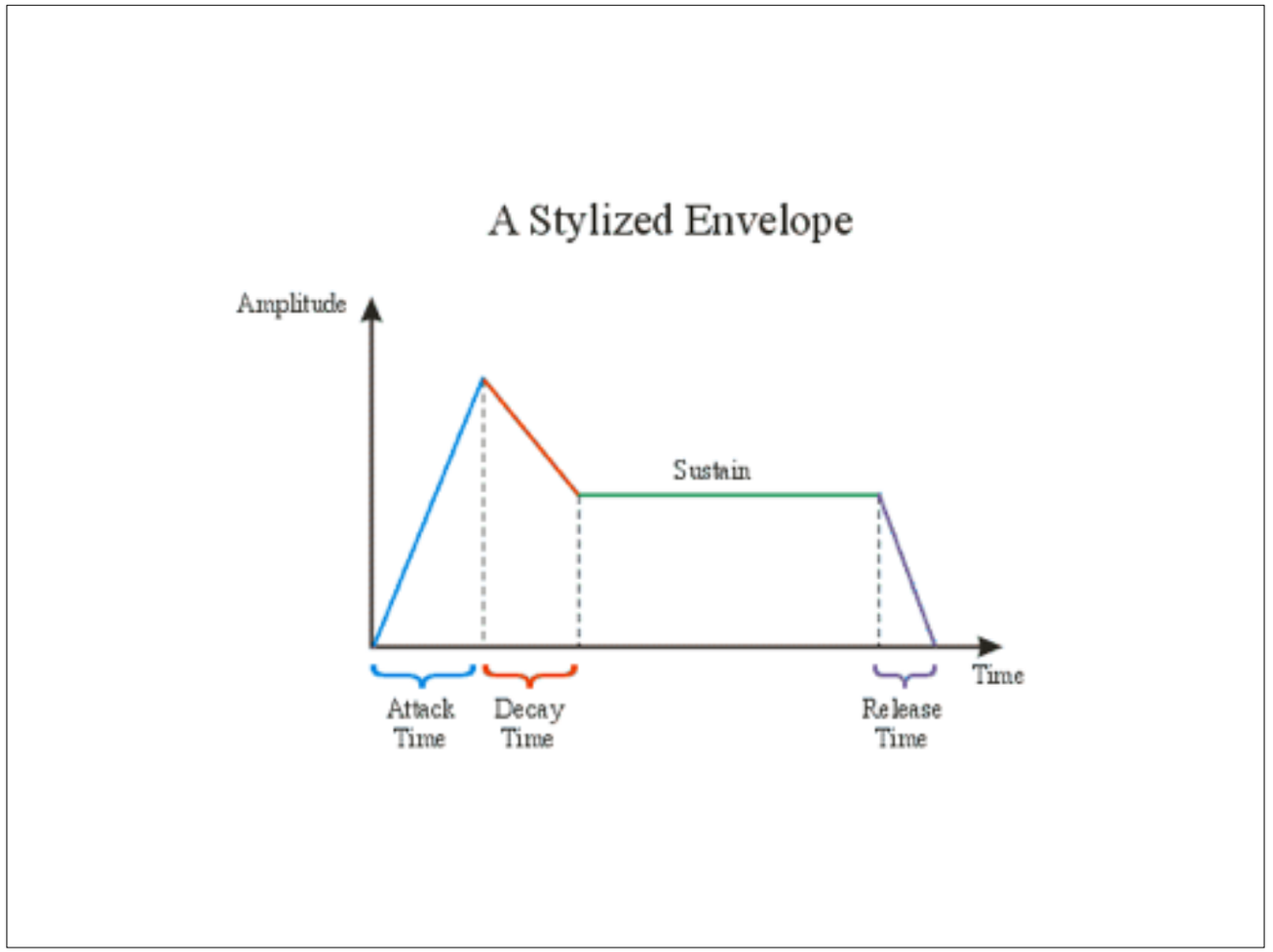
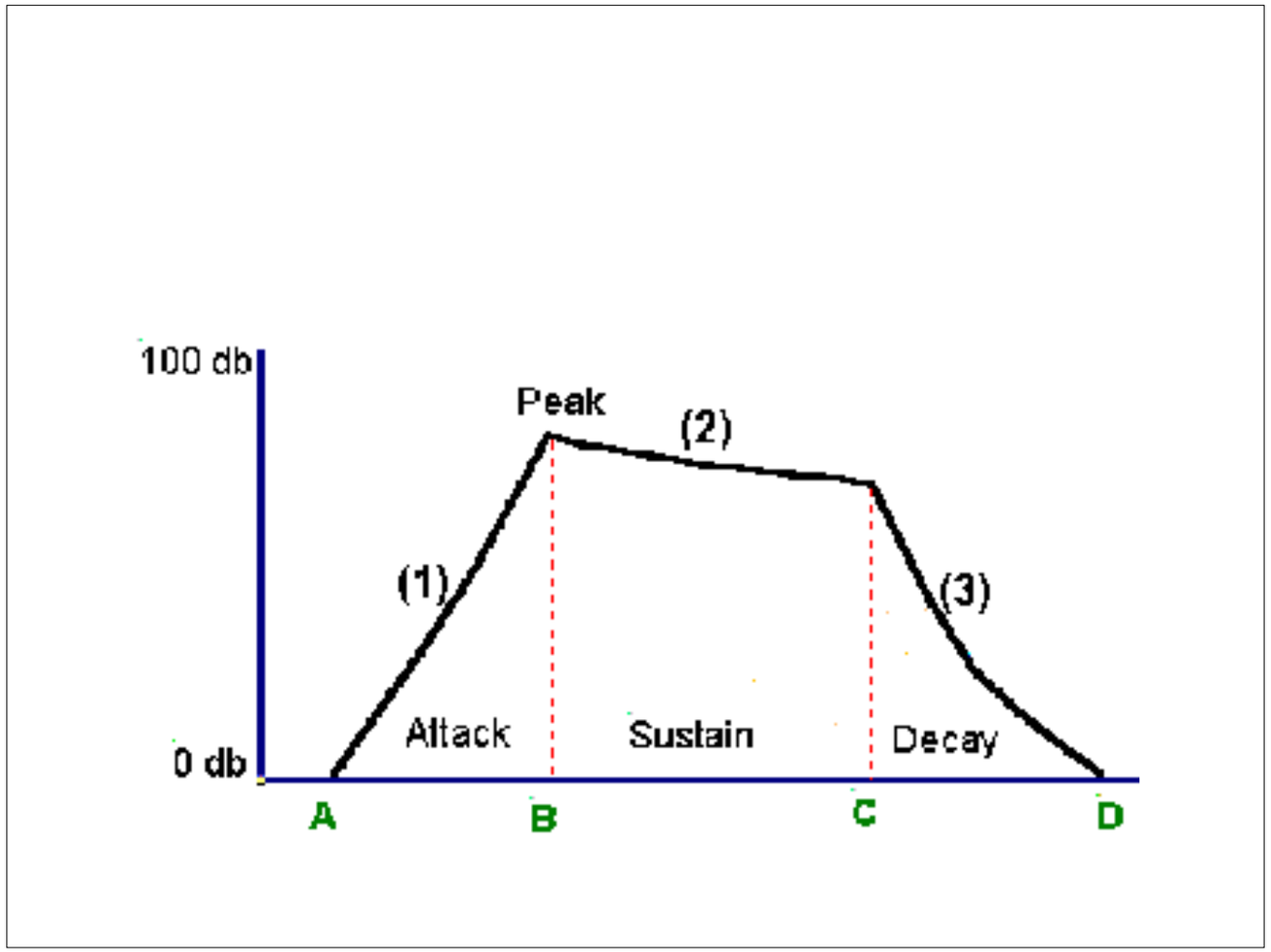
P5 + Sound



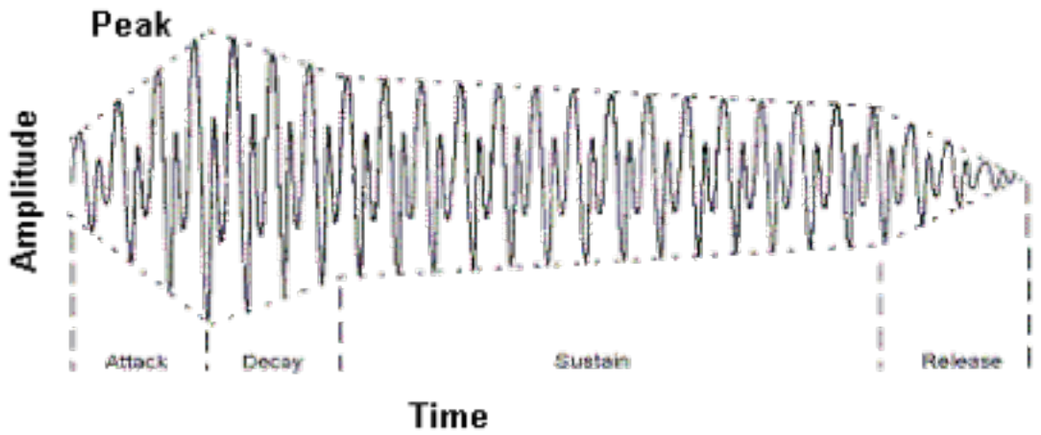
the attack, sustain, and decay of a sound.



Attack transients consist of changes occurring before the sound reaches its steady-state intensity.

Sustain refers to the steady state of a sound at its maximum intensity,

decay is the rate at which it fades to silence.


Peak
Amplitude
Attack
Decay
Sustain
Release
Time

FFT

The Fast Fourier Transform (FFT) resolves a time waveform into its sinusoidal components. The FFT takes a block of time-domain data and returns the frequency spectrum of the data. The FFT is a digital implementation of the Fourier transform. Thus, the FFT does not yield a continuous spectrum. Instead, the FFT returns a discrete spectrum, in which the frequency content of the waveform is resolved into a finite number of frequency lines, or bins.

convert the sound from the frequency domain to the time domain

begin by reading in the sound file and extracting the data from it. The rate information isn't important because you don't need to know how fast to play the data, you simply need to know what values the sound contains. The sound values consist of frequency (the tone of the sound) and amplitude (how loud to play it).

The next step is to perform the FFT by calling fft() with data. This particular analysis is a simplification of a much larger process. The point is that the output displays the strongest detected frequencies over time.

MIDI

sound format

it is just a series of messages like "note on," "note off," "note/pitch," "pitchbend," and many more.