

Sound and Frequency

Frequency means how often something happens.

e.g. trains arrive at :00, :20, and :40.

The frequency of trains is³..... trains per hour.

If you have to change your ink cartridge every week, the frequency of changing is⁵²..... cartridges per year.

A fly flaps its wings 500 times in 5 seconds. The frequency is¹⁰⁰..... flaps per second.

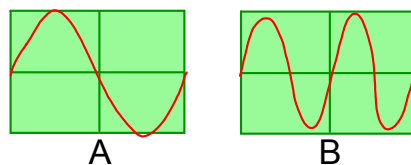
In physics, 'per second' is also called hertz (Hz), so we could say that the fly flaps its wings with a frequency of 100Hz.

With sound, 100Hz would mean 100 vibrations per second.

Humans can hear sounds with frequencies from 20Hz to 20,000Hz (20kHz).

The frequency of a sound determines its pitch - the higher the frequency, the higher the pitch.

An oscilloscope can be used to visualise sound:



The height of the wave is called the amplitude (measured from middle). This determines the loudness. A and B are the same loudness.

The x-axis is time - so the more waves there are on the x-axis, the higher the frequency and the higher the pitch.

A has a lower frequency and pitch than B.