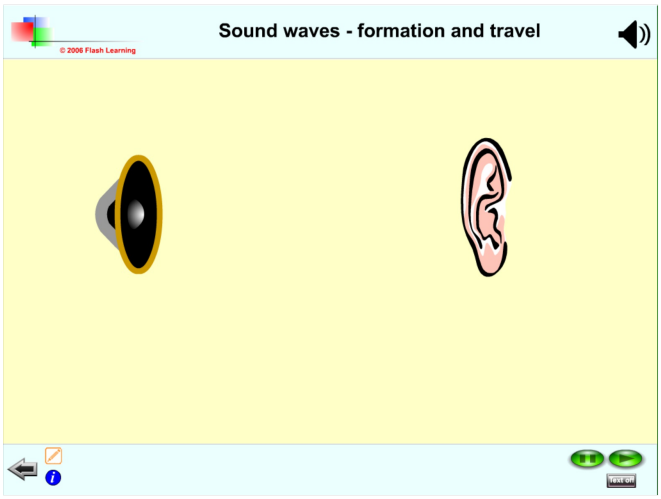
Science For Life

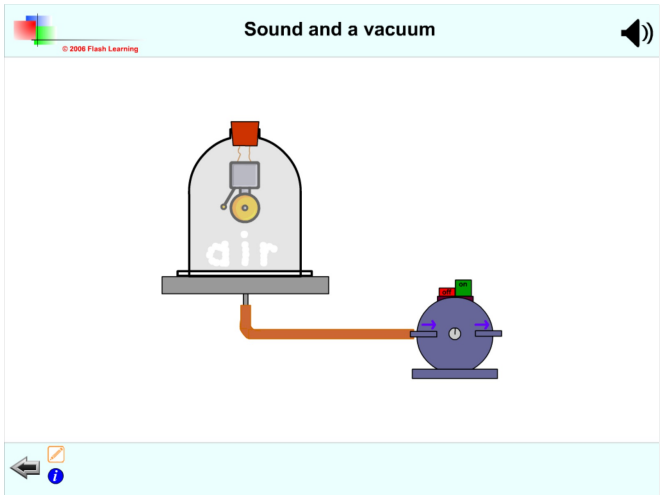
SOUND

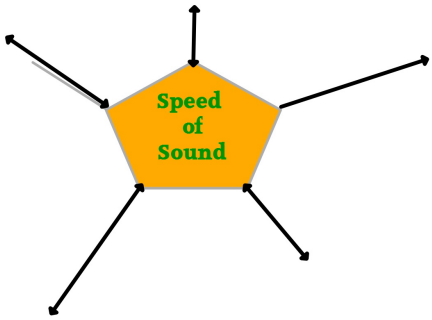
\\Lcka-ap2\FlashLearning\Physics Animations\Sound\Sound to ear.swf

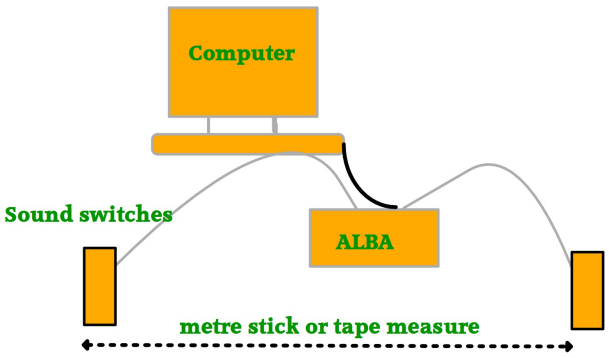
What's wrong with that clip?

\\Lcka-ap2\FlashLearning\Physics Animations\Physics Animations.exe









Distance (m)	Time (s)	Speed (m/s)

The Range of HUMAN HEARING

Humans can hear FREQUENCIES between

20- 20 000 Hertz

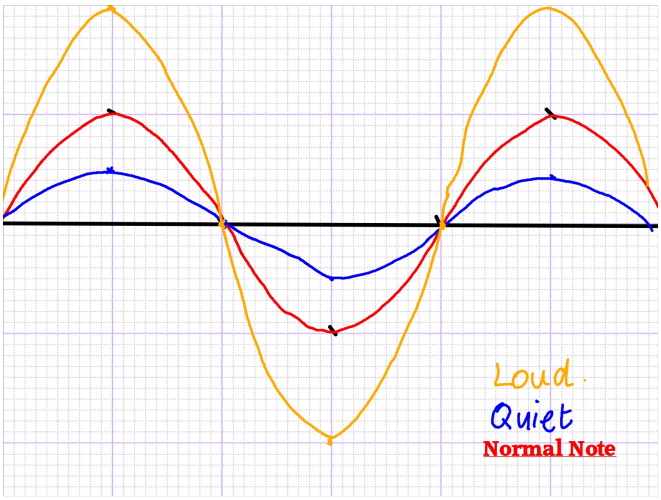
As you get older you lose the ability to hear HIGH PITCHED SOUNDS

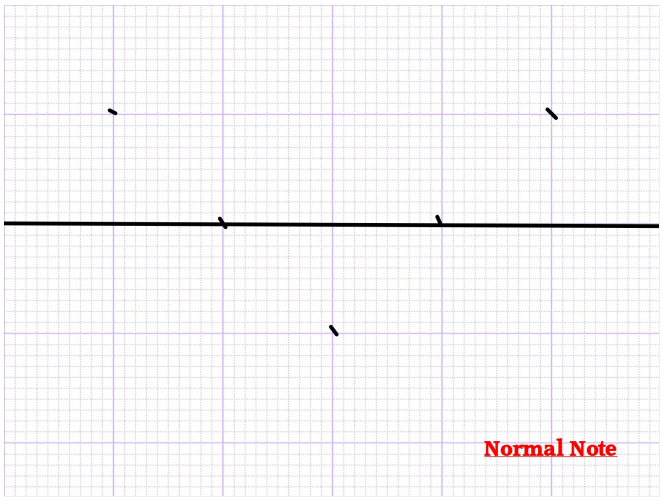
Mrs Hargreaves 13500 Hz.

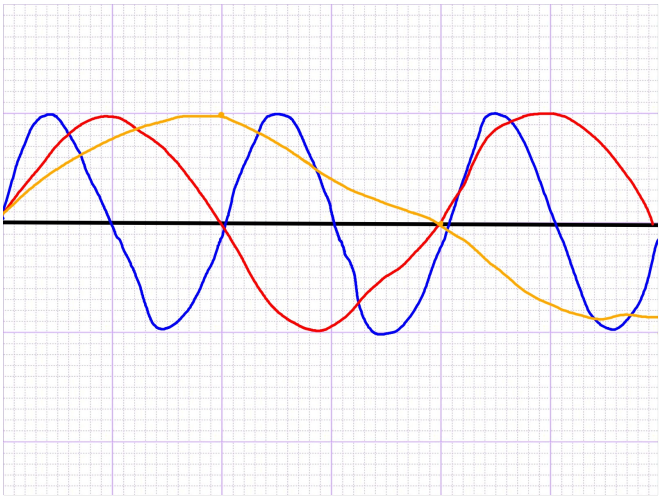
Matt appeared to have the best hearing.

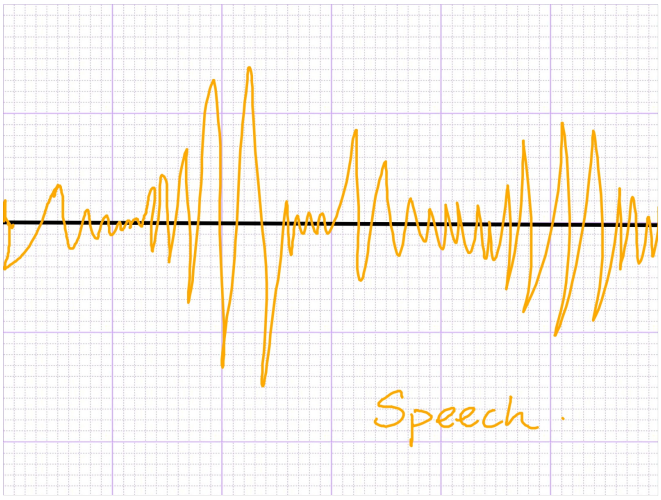
The maximum frequency I can hear is.....

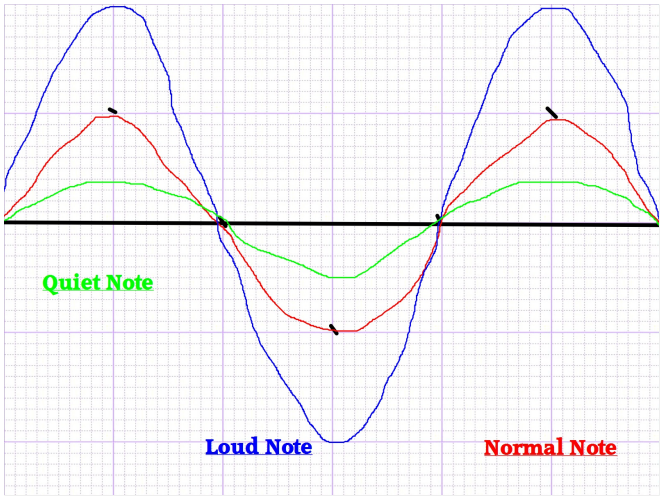
Frequency of the sound = PITCH

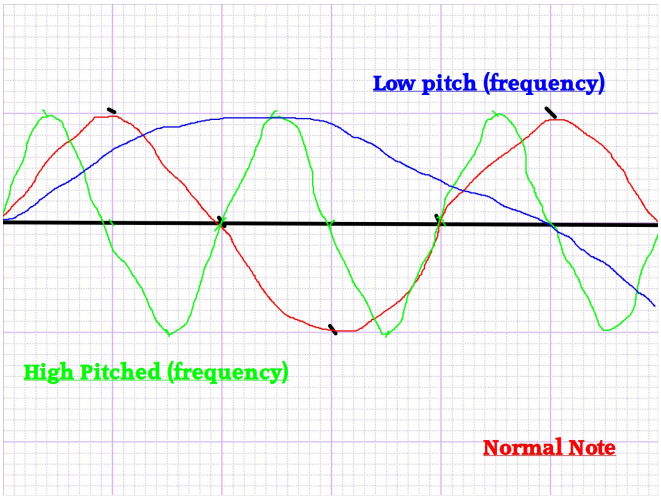

Loud
Quiet
Normal Note


Normal Note




Speech


Quiet Note
Loud Note
Normal Note

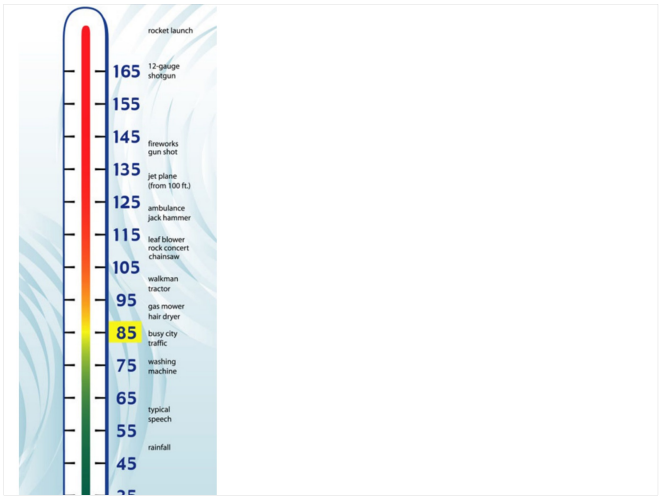


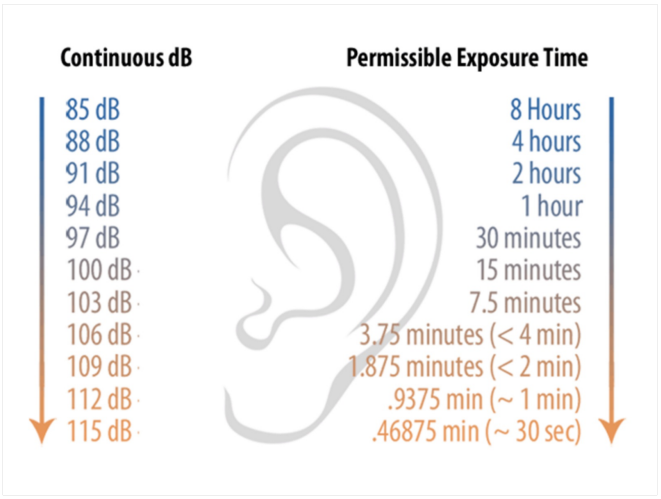
Sound Levels

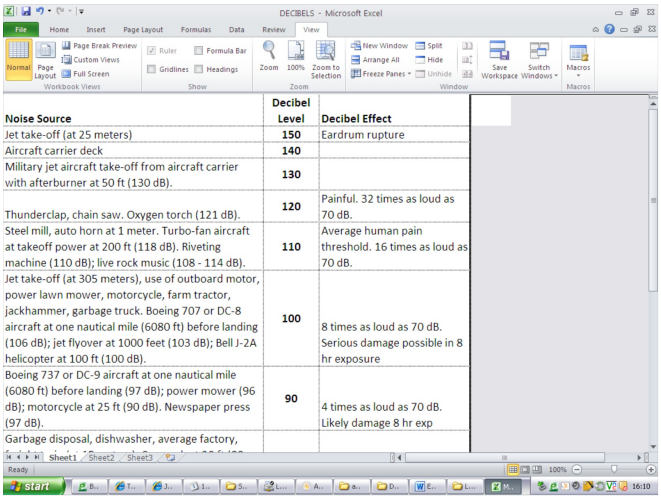
the amplitude of a sound is an indication of the energy and LOUDNESS of a note.

This is measured in DECIBELS, dB

Loudness is measured in dB which is a log scale







DECIBELS - Microsoft Excel

Noise Source	Decibel Level	Decibel Effect
Jet take-off (at 25 meters)	150	Eardrum rupture
Aircraft carrier deck	140	
Military jet aircraft take-off from aircraft carrier with afterburner at 50 ft (130 dB).	130	
Thunderclap, chain saw. Oxygen torch (121 dB).	120	Painful. 32 times as loud as 70 dB.
Steel mill, auto horn at 1 meter. Turbo-fan aircraft at takeoff power at 200 ft (118 dB). Riveting machine (110 dB); live rock music (108 - 114 dB).	110	Average human pain threshold. 16 times as loud as 70 dB.
Jet take-off (at 305 meters), use of outboard motor, power lawn mower, motorcycle, farm tractor, jackhammer, garbage truck. Boeing 707 or DC-8 aircraft at one nautical mile (6080 ft) before landing (106 dB); jet flyover at 1000 feet (103 dB); Bell J-2A helicopter at 100 ft (100 dB).	100	8 times as loud as 70 dB. Serious damage possible in 8 hr exposure
Boeing 737 or DC-9 aircraft at one nautical mile (6080 ft) before landing (97 dB); power mower (96 dB); motorcycle at 25 ft (90 dB). Newspaper press (97 dB).	90	4 times as loud as 70 dB. Likely damage 8 hr exp
Garbage disposal, dishwasher, average factory,		