

## Study Guide for Chapter 2 Sound Test

Name: \_\_\_\_\_

Section: \_\_\_\_\_

A medium is a substance through which a wave can travel. Media (plural for medium) consist of any solid, liquid, or gas, but not a vacuum. Examples of media include, air, water, metal, glass, stone.

There are several ways you can protect your ears, including: relocating to an area further away from sound source, wearing ear plugs or ear muffs, turning volume on music source to lower setting.

A longer string produces a lower fundamental note than a shorter string.

Sound Quality is the blending of pitches through interference.

The amplitude of a sound determines the loudness. The greater the amplitude, the louder the sound is perceived. Loudness is how well a sound can be heard measured in decibels. Pain begins around 120 decibels.

The frequency of a sound wave determines pitch. Frequency is measured in Hertz.

Ultrasonic sounds are sounds above the highest frequency we are able to detect. For humans, ultrasonic sounds would be above 20,000 Hz.

The Doppler Effect is due to the relative motion of either the sound source or the listener. If you are in front of the source as it is moving toward you, the pitch will be higher. As it moves away, the pitch will be lower.

An echo is a reflected sound wave, which is most likely to occur as a sound wave bounces off a smooth hard surface.

A person experiences a sonic boom when a shock wave reaches the ear.

Common misconceptions about sound: air, or any medium, travels with the sound wave; sound can travel in a vacuum, sound only exists if heard. These are all false.

### Parts of Ear:

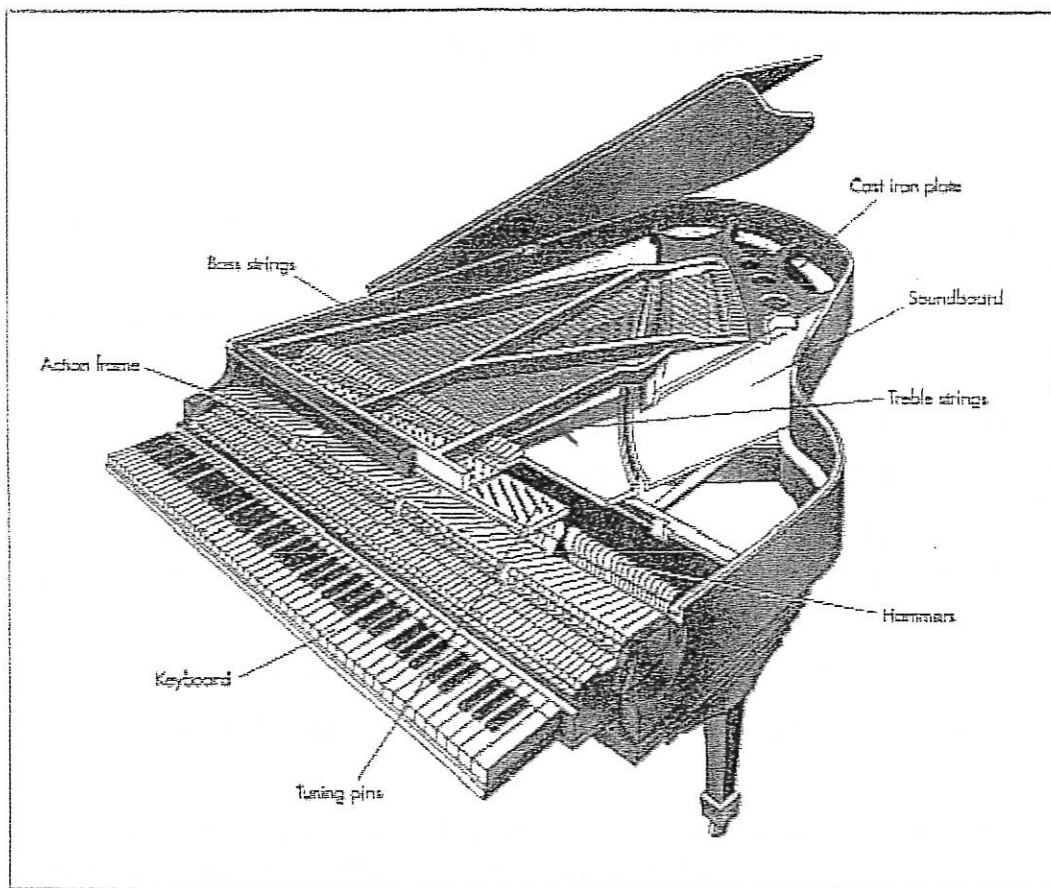
Ear drum: membrane which divides the outer ear from the middle ear. Sound must pass through the ear drum as it goes from outer to middle ear.

Middle Ear: Three bones which consist of the anvil, hammer and stirrup. These increase, or multiply, the size of vibrations.

Cochlea: Spiral sea shell shaped component which is filled with liquid and has tiny hairs. The movement of the tiny hairs sends electrical signals to the brain.

The speed of sound varies from one medium to another.

An oscilloscope can be used to give a graphic representation of a sound wave. Rarefactions would be graphically represented by troughs, and compressions would be represented by crests.



Grand Piano