



# Year 4 Sound Knowledge Organiser



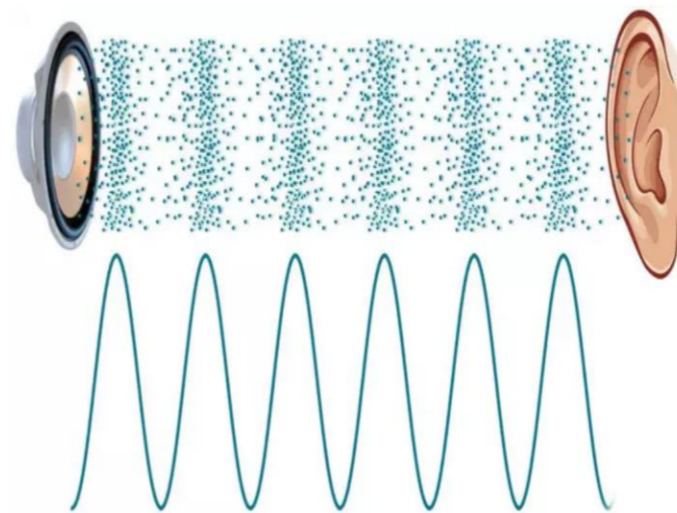
Assessment question: How do we hear sounds made by a musical instrument?

## Overview



- Sounds are made when objects vibrate.
- Vibrations travel from objects in waves to our ears, allowing us to hear sound.
  - Weak vibrations make a gentle soundwave which do not travel as far as strong vibrations. This is why sounds have different volumes.
- Sounds can be high pitched or low pitched. Tight, short frequency waves make a high-pitched sound, while more loose waves make low-pitched sounds.

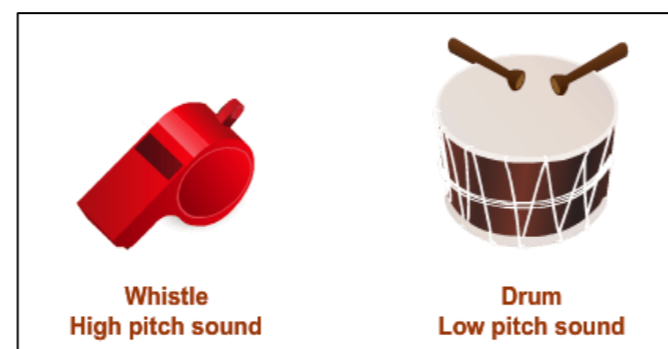
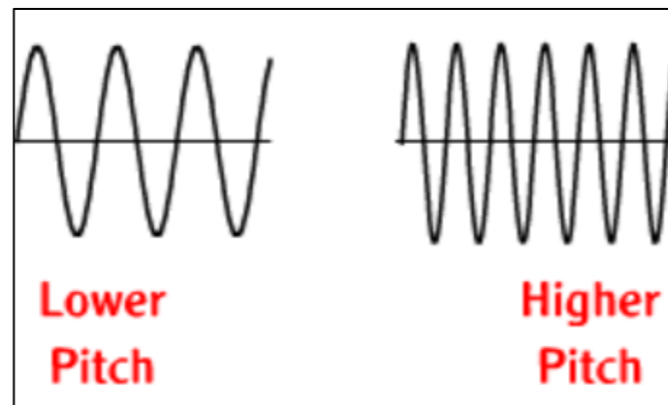
## How Sounds are Made



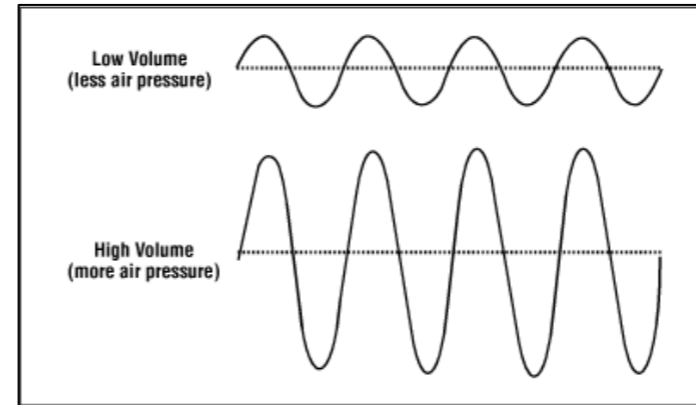
- Sounds are created when something **vibrates** (shakes back and forth).
- This creates soundwaves which travel to the ears of the listener.
- When a bell is struck, the metal of the bell vibrates. These vibrations create waves in the air (sound waves).
- When they reach our ears, they make our eardrums vibrate, and we hear the sound of the bell ringing.

## Pitch

- Pitch** is the highness or lowness of sounds.
- Pitch is caused by the frequency of vibrations (how many times vibrations go back and forth per second).
- The higher the rate of vibrations, the higher the pitch.
- Lower pitch sounds have a lower rate of vibrations.
- Humans can hear a large range of pitches, high-pitch sounds e.g. a mouse squeak to low-pitch sounds e.g. the rumble of an earthquake.
- However, some sounds are too high or low-pitched for us to hear.



## Volume



- Volume** is the loudness of a sound.
- The volume of a sound depends on the amount of energy that the vibrations contain.
- Vibrations with lots of energy create large soundwaves.
- When these large soundwaves arrive at your ears, they push harder on your eardrums.
- This is why when we strike a drum harder (with more energy) it is louder than when we strike it more softly.
- Our ears can detect a wide range of loud and quiet sounds, from rumbling jet engines to leaves rustling.

### Insturments

- Percussion** - played by striking with the hand or stcik, or by shaking - drums, cymbals and bells.
- Strings** - wire or cord stretched across, which vibrate to produce sound.
- Brass** - wind instrument made of brass such as trumpets and trombones.
- Woodwind** - wind instruments ususally made of wood such as clarinets and obeos.

### Low Pitch Sounds

Lion's Roar      Tuba      Bass Guitar      Thunder

### High Pitch Sounds

Child's voice      Whistle      Shriek      Mouse Squeak