



# SOUND

## KNOWLEDGE ORGANISER

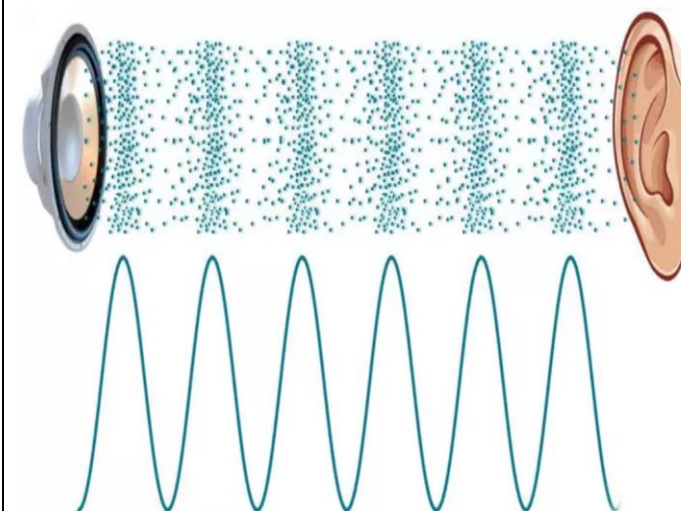


### Overview



- 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.

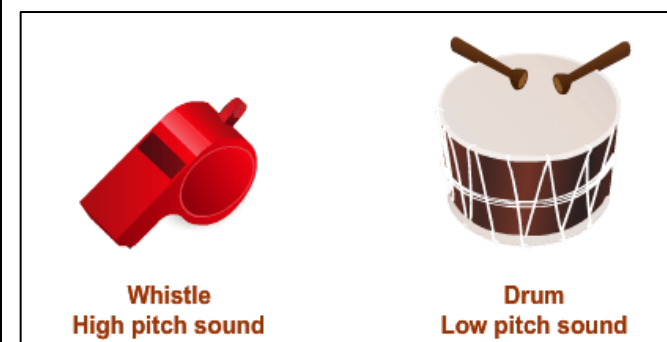
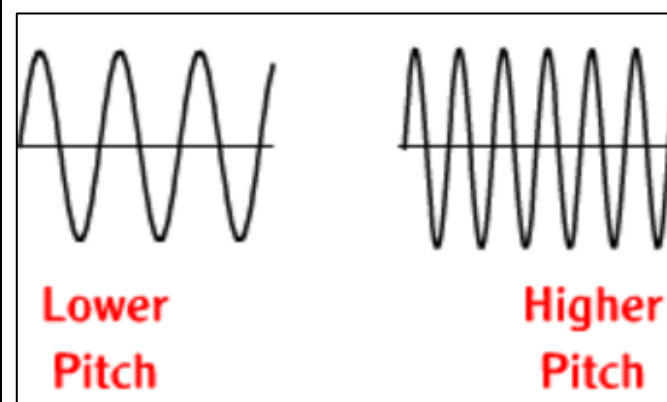
### How Sounds are Made



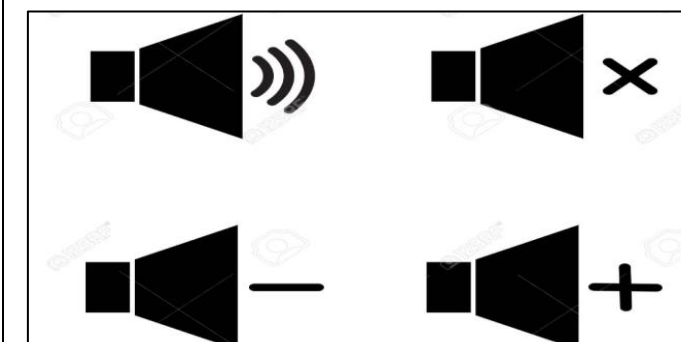
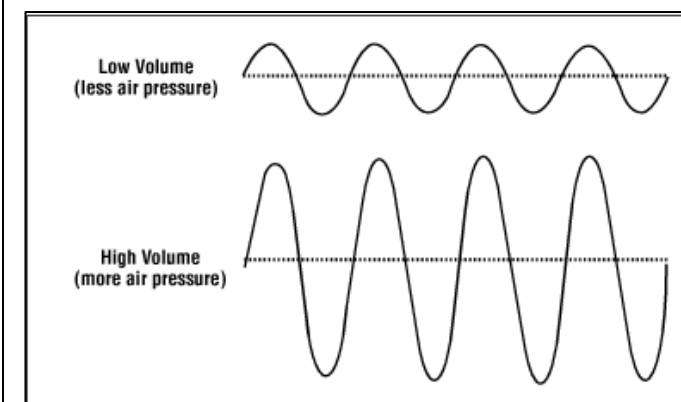
- Sounds are created when something vibrates (shakes back and forth).
- This creates soundwaves which travel to the ears of the listener.
- When a bell is struck, the metal of the bell vibrates. These vibrations create waves in the air (sound waves).
- When they reach our ears, they make our eardrums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

#### Low Pitch Sounds

Lion's Roar      Tuba      Bass Guitar      Thunder

#### High Pitch Sounds

Child's voice      Whistle      Shriek      Mouse Squeak