Kettering Science Academy	**7L Sound**

1. Making Sounds	
Making Sounds	Sounds are made by something vibrating.
Intensity	How loud or soft a sound is- its volume.
Pitch	How high or low a sound is.
Frequency	The number of vibrations each second. The higher the frequency the higher the pitch.
Hertz (Hz)	The units for measuring frequency.
Amplitude	The size of vibrations. The bigger the amplitude the louder the note.
Humans Making Sounds	Two flaps (vocal folds) across the windpipe vibrate when air moves across them.
Grasshoppers Making Sounds	Male grasshoppers chirp by rubbing one leg against a wing.
Gorillas Making Sounds	Male gorillas thump their chests or thump the ground to threaten other males.

2. Moving Sounds	
Moving Sounds	Sounds can only travel through a medium (a solid, liquid or gas).
Vacuum	A completely empty space. Sound cannot travel through.
Particles	Tiny pieces of matter that make up everything.
Sound Moving Through the Air	Air particles vibrate and cause nearby particles to vibrate so the vibrations spread through the air.
Sound Wave	Formed by the moving vibrations.
Pressure Wave	The air particles are pushed together in some place (high pressure) and spread out in other places
Sound Wave Frequency	The number of waves passing a point per second.
Sound Wave Amplitude	The distance moved by air particles as the sound wave passes.
Energy	Energy is transferred from one place to another by sound waves. They do not transfer particles.
Speed of Sound	Sound travels faster in solids because the particles are close together.
Moving Away from A Source	As you move away from a source of sound, the energy carried has spread out further so there is less energy for your ear to detect- it sounds quieter.

3. Detecting Sounds	
How Microphones Detect Sounds	Sounds make a thin sheet of materials (a diaphragm) vibrate and electrical circuits convert these vibrations into electrical currents.
Decibels (dB)	The units for measuring the loudness of a sound.
Auditory Range	The range of frequencies an organism can hear 20Hz – 20000Hz in humans
Infrasound	Sounds below 20Hz
Ultrasound	Sounds above 20000Hz

4. Using Sound	
Using Sound	Sound is often used for communication.
Transmitted	Energy from sound waves goes through some materials.
Reflected	Energy from sound waves bounces off some materials.
Using High Frequency Waves	•Treat injuries •Clean delicate objects by making tiny bubbles that loosen dirt when the burst.
Echo	A reflected sound
Echolocation	Used by animals (bats, dolphins, etc.) to find their way around/find prey.

5. Comparing Waves	
Longitudinal Waves	Particles vibrate in same direction wave is moving.
Transverse Waves	Particles vibrate at right angles to direction wave is moving.