ADVENT TERM 1 – CYCLE A SCIENCE – Year 4 and Year 3 - Medium Term Planning – PHYSICS: SOUND		
LESSON 1	**LESSON 2**	**LESSON 3**
Recap & retrieval:	**Recall & retrieval:** • Sound is energy produced by vibrations made by a sound source.	**Recall & retrieval:** • Sound is energy produced by vibrations made by a sound source. • Sound waves travel through a medium, such as air or water, to the ear.
LEARNING INTENTION: **Year 3** To know that sounds are made by vibrations. **Year 4** To know and describe how sounds are made by vibrations. **Skills: Disciplinary Knowledge** **Year 3** **Carefully observing** and exploring the vibrations made by a range of objects **Year 4** Systematically observing and exploring the vibrations made by a range of objects **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** **Year 3** To know that sounds travel through a medium to the ear. **Year 4** To know and describe how sound travels through a medium to the ear. **Skills: Disciplinary Knowledge** **Year 3** Explore and identify different objects and surfaces to see which provides the best insulation against sound **Year 4** Investigate and explore with different objects and surfaces to see which provides the best insulation against sound **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** **Year 3** To know that the features of an object effect the pitch of the sound made. **Year 4** To know and give reasons why the features of an object effect the pitch of the sound made. **Skills: Disciplinary Knowledge** **Year 3** Explore and make links/identify with different instruments. **Year 4** Investigate and explore with different instruments. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
Key Vocabulary: Vibrations, sound waves, pinna, ear canal, eardrum, ossicles, inner ear, cochlea, cochlear nerve, brain, signals	**Key Vocabulary:** Vibrations, sound waves, medium, wavelength	**Key Vocabulary:** Pitch, high, low, hertz, vibrations, speed, fast, slow
Key Knowledge: **Child:**	**Key Knowledge:** **Child:**	**Key Knowledge:** **Child:**

• Sound is energy produced by vibrations made by a sound source. • These vibrations travel as a sound wave. **Teacher:** • When an instrument is played, the air around or inside it vibrates. • Sound waves travel through a medium and enter the ear, where they are turned into electrical signals that travel to the brain and are interpreted as sound.	• Sound waves travel through a medium, such as air or water, to the ear. • Where there is no medium for sound waves to travel through, such as in space, there is no sound **Teacher:** • These vibrations travel as a sound wave. • The ear drums vibrate in a similar way to the original source of the vibration, allowing us to hear many different sounds. • Sound waves can be represented by a wavy line in a sound wave diagram. • Volume is represented by the size of the peaks and troughs; large peaks and troughs represent a loud volume and small peaks and troughs represent a quiet volume. • Pitch is represented by the distance between each peak, called the wavelength. • A long wavelength represents a low-pitched sound, and a short wavelength represents a high-pitched sound.	• The pitch of a sound is how high or low it is. • Fast vibrations produce high-pitched sounds, such as the sound of a whistle. • Slow vibrations produce low-pitched sounds, such as the sound of a bass drum. **Teacher:** • Pitch is measured in units called hertz (Hz). Humans can hear between 20 and 20,000 Hz but dogs can hear higher-pitched sounds.

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LESSON 4	**LESSON 5**	**LESSON 6**
Recall & retrieval: • Sound is energy produced by vibrations made by a sound source. • Sound waves travel through a medium, such as air or water, to the ear. • Fast vibrations produce high-pitched sounds	**Recall & retrieval:** • Sound is energy produced by vibrations made by a sound source. • Sound waves travel through a medium, such as air or water, to the ear. • Fast vibrations produce high-pitched sounds • The larger the force of energy put into the sound source, the louder the volume.	**Recall & retrieval:** • Sound is energy produced by vibrations made by a sound source. • Sound waves travel through a medium, such as air or water, to the ear. • Fast vibrations produce high-pitched sounds • The larger the force of energy put into the sound source, the louder the volume. • The nearer the sound source, the louder the volume.
LEARNING INTENTION: **Year 3** To know that the strength of the vibration is related to the volume of the sound. **Year 4** To know and give reasons why the strength of the vibration is related to the volume of the sound. **Skills: Disciplinary Knowledge** **Year 3** Identify changes and relate to simple patterns in the volume of a sound, using a range of equipment, such as musical instruments. **Year 4** Compare and find patterns in the volume of a sound, using a range of equipment, such as musical instruments. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** **Year 3** To know that the volume of a sound is affected by distance. **Year 4** To know and explain that the volume of a sound is affected by distance. **Skills: Disciplinary Knowledge** **Year 3** Make simple comparisons about how the volume of a sound changes at different distances from the source. **Year 4** Compare how the volume of a sound changes at different distances from the source. **Aim:** Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.	**LEARNING INTENTION:** **Year 3** To know that Alexander Graham Bell was an inventor. **Year 4** To know and give reasons why Alexander Graham Bell was an inventor. **Skills: Disciplinary Knowledge** **Year 3** Understand and describe the link between Alexander Graham Bell inventing the phone and how it links to sound. **Year 4** Research and understand the link between Alexander Graham Bell inventing the phone and how it links to sound. **Aim:** Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
Key Vocabulary:	**Key Vocabulary:** distance, nearer, further, volume, louder, quieter	**Key Vocabulary:** Decibel, invention, telephone,

Volume, decibels, force, vibrations, energy, louder, quieter, muffle, absorb		
Key Knowledge: **Child:** • The volume of a sound is how loud it is. • The larger the force of energy put into the sound source, the louder the volume. • The smaller the force, the quieter the volume. **Teacher:** • It is measured in units called decibels (dB). • Putting less energy into a sound source creates smaller sound waves, meaning the sound will be quieter. • Sound can be muffled by inserting a material into the sound wave's path that absorbs sound waves.	**Key Knowledge:** **Child:** • Distance affects volume. • The nearer the sound source, the louder the volume. • The further away the sound source, the quieter the volume. **Teacher:** • Sound waves travel from the sound source in all directions. • The sound waves become smaller as the energy dissipates and the sound becomes gradually quieter.	**Key Knowledge:** **Child:** • Named after the inventor Alexander Graham Bell, a decibel (dBA) is the unit used to express the intensity of sound. • Alexander Graham Bell was given the patent for his invention of the telephone on 7th March 1876. **Teacher:** • Alexander Bell was born in Edinburgh on 3 March 1847. • Sound and speech were part of Bell's life from a young age. Both his father and grandfather were well-known teachers of elocution and speech training. • Young Bell attempted to make working models of ear and vocal chords, aiming to create a mechanical speech device.
Assessment Cumulative quiz. Retrieval practice.		