ADVENT TERM 1 SCIENCE – Year 4 - Medium Term Planning – PHYSICS: SOUND		
LESSON 1	**LESSON 2**	**LESSON 3**
Setting up tests **LEARNING INTENTION:** To know that sounds are made by vibrations. **Disciplinary Knowledge:** • Set up simple practical enquiries, comparative and fair tests. **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.	**Recording data** **LEARNING INTENTION:** To know that sounds travel through a medium to the ear. **Disciplinary Knowledge:** • Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables. **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.	**Observing and Measuring** **LEARNING INTENTION:** To know that the features of an object effect the pitch of the sound made. **Disciplinary Knowledge:** • Identify differences, similarities or changes related to simple scientific ideas and processes. **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
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.
Key Knowledge: **Child:**	**Key Knowledge:**	**Key Knowledge:**

• 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.	**Child:** • 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.	**Child:** • 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.

ADVENT TERM 1
SCIENCE – Year 4 - Medium Term Planning – PHYSICS: SOUND

LESSON 4	LESSON 5	LESSON 6
Observing and Measuring **LEARNING INTENTION:** To know that the strength of the vibration is related to the volume of the sound. **Disciplinary Knowledge:** • Identify differences, similarities or changes related to simple scientific ideas and processes. **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.	**Interpreting results** **LEARNING INTENTION:** To know that the volume of a sound is affected by distance. **Disciplinary Knowledge:** • . • Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. **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.	**Asking Enquiry Questions** **LEARNING INTENTION:** To know that Alexander Graham Bell was an inventor. **Disciplinary Knowledge:** • Ask relevant questions and use different types of scientific enquiries to answer them. **Aim:** Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
Key Vocabulary: **volume**, decibels, **force,** vibrations, **energy, louder, quieter,** muffle, absorb	**Key Vocabulary:** distance, **nearer,** further, **volume**, **louder**, quieter	**Key Vocabulary:** **decibel, invention, telephone**
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. • The pitch of a sound is how high or low it is.	**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. • The pitch of a sound is how high or low it is. • 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. • The pitch of a sound is how high or low it is. • The larger the force of energy put into the sound source, the louder the volume.

		• The nearer the sound source, the louder the volume.
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.		