



## Year 4 Science Knowledge Organiser: Sound



### Key Science Skills

- I can ask relevant questions and use different types of scientific enquiry to answer them.
- I can set up simple practical enquiries, comparative and fair tests.
- I can make systematic and careful observations
- I can gather, record, classify and present data in a variety of ways.
- I can record findings using simple scientific language, drawings and diagrams.
- I can use scientific evidence to answer questions and support my findings.

### Prior Learning

- We hear sound using our ears and sense of hearing.
- Pitches can be higher or lower.

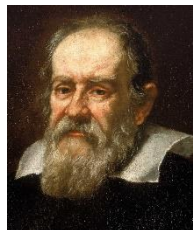
### Key Knowledge

- Sound is a type of energy. Sounds are created by vibrations. The louder the sound, the bigger the vibration.
- Pitch is a measure of how high or low a sound is.
- The size of the vibration is called the amplitude. Louder sounds have a larger amplitude and quieter sounds have a smaller amplitude.
- You can change the pitch of a sound in different ways.
- Sound can travel through solids, liquids and gases. Sound travels as a wave, vibrating the particles in the medium it is travelling in. Sound cannot travel through a vacuum.

### Key Individual: Leonardo Da Vinci



### Key Individual: Galileo Galilei



### Key Vocabulary

**Amplitude** The height between the peak and midpoint of a wave, related to its energy. In a sound wave, for example, the bigger the amplitude, the louder the sound.

**Compression** The act of pushing particles closer together.

**Compression/Longitudinal wave** A type of wave in which the particles of the medium vibrate in the same direction as the travelling energy.

**Frequency** A measure of how many vibrations (or waves) are produced every second. Frequency is measured in hertz (Hz). 1 Hz = 1 vibration every second.

**Pitch** How high or low a sound is. The pitch of a sound depends on the frequency of the vibration producing it.

**Sound** A form of energy that can be heard. Sounds are made by vibrations. Sound energy is carried from its source in the form of sound waves.

**Rarefaction** A decrease in density and pressure in a medium. This could be caused by the movement of sound waves through air.

**Medium** Any type of material: a solid, liquid or gas. Sound can travel through all mediums.

**Vibrate** To move back and forth quickly.

**Volume** A measure of the loudness of a sound.

### Key Knowledge

- Inside your ear, the vibrations hit the eardrum and are then passed to the middle and then the inner ear. They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.
- Sound energy can travel from particle to particle far easier in a solid because the vibrating particles are closer together than in other states of matter.
- If you throw a stone in a pond, it will produce ripples. As the ripples spread out across the pond, they become smaller. When sound vibrations spread out over a distance, the sound becomes quieter, just like ripples in a pond.

