Science Knowledge and Skills Overview – Year Four Sound

National Curriculum Objectives	Sticky Knowledge	Key Questions
• Pupils should be taught to identify how sounds are made, associating some of them with something vibrating. • Pupils should be taught to recognise that vibrations from sounds travel through a medium to the ear. • Pupils should be taught to find patterns between the pitch of a sounds and features of the object that produced it. • Pupils should be taught to find patterns between the volume of a sound and the strength of the vibrations that produced it. • Pupils should be taught to recognise that sounds get fainter as the distance from the sound source increases.	• Sound is caused by the vibrating of a medium (usually air) and it travels in waves. • Sounds have either a high or low pitch. • There are patterns between the pitch of a sound and the features of the object that produced it (e.g. tight/loose drum skin, thick/thin guitar strings, short/long boomwhackers, keys on a glockenspiel). • The louder the sound, the bigger the vibrations. • The quieter the sound, the smaller the vibrations. • The further away the sound source, the fainter the sound is heard.	What food chains and webs are there in our local habitat? How does energy move through the food chain? How does removal of one species from an environment affect others? How does environmental change affect different organisms? What are the most important things we could do to improve our outside area? (pond, compost, wildflowers, litter picking) How does human activity affect our environment? (new house buildings, use of pesticides, deforestation)
Links to NHFS core curriculum themes	**Vocabulary**	**Key Scientists**
Sustainability – noise pollution, impact on wild animals **Aspirations** – Science professionals e.g. audiologist, sound engineer **Equality** – considering hearing loss/impairment	Sound, vibrating, vibration, sound wave, pitch, high pitch, low pitch, loud, quiet, faint, sound source	James West (Inventor and acoustician) Alexander Graham Bell (Inventor and engineer)
Prior Learning	**Future Learning**	**Investigating…**
In KS1 children should: • Have some understanding that objects make different sounds • Understand that they use their ears to hear sounds • Know about different senses.	In KS3 children will: • Know about frequencies of sound waves, measured in Hertz (Hz), echoes, reflection and absorption of sound. • Know that sound needs a medium to travel,the speed of sound in air, water and solids. • Know that sound is produced by vibrations of objects and detected by the ear drum. • Sound waves are longitudinal. • The auditory range of humans and animals.	Is there a relationship between the sound produced by an object, and the characteristics of the object producing the sound?
 How does the volume of a drum change as you move away from it?	 Which material is best for muffling sound?	 When is our classroom the quietest?	 Is there a link between how loud it is in school and the time of day?	 Do all animals have the same hearing range?