Big Question:

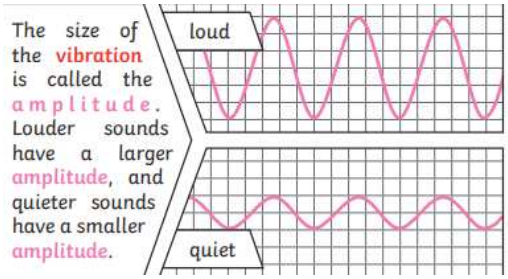
How do we hear different sounds?

Key Vocabulary:

Sound Wave: Vibrations travelling from a sound source.
Vibration: A quick movement back and forth.
Travel: To move from one place to another.
Ear Drum: A part of the ear which a thin, tough layer of issue that is stretched out like a drum skin. Sound waves make the ear drum vibrate.
Pitch: How high or low a sound is.
Volume: The loudness of a sound.

New knowledge that will help me answer the big question:

- Volume is how loud or quiet a sound is.
- The harder an instrument is hit plucked or blown, the stronger the vibrations and the louder the sound.



- Sounds are louder closer to the sound source.
- Sounds are quieter as the distance from the sound source increases.

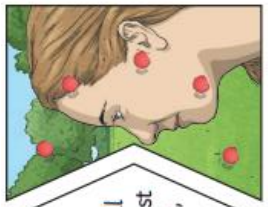
New knowledge that will help me answer the big question:

- Pitch is how high or low a sound is.
- Parts of an instrument that are shorter, tighter or thinner produce high-pitched sounds.
- Parts of an instrument that are longer, looser or fatter produce low-pitched sounds.

		
Pulling a drum skin tighter, will make the sound it produces higher. Making a drum skin looser, will make the sound it produces lower.	Tightening the strings of a violin, will make the sound it produces higher. Loosening the strings of a violin, will make the sound it produces lower.	A guitar with thin strings will produce a high pitched sound. A guitar with thick strings will produce a low pitched sound.

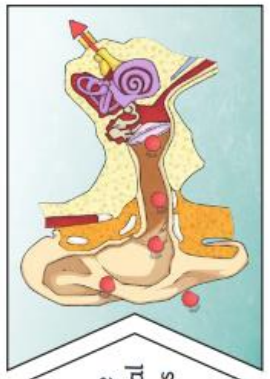
New knowledge that will help me answer the big question:

- Sounds are created by vibrations. The louder the sound, the bigger the vibration.
- These vibrations travel as a sound wave.
- Sound waves can travel through a medium, such as air or water, to the ear.



The vibrations then pass to the next air particle, then the next, then the next. This carries on until the air particles closest to your ear vibrate, passing the vibrations into your ear.

When you hit the drum, the drum skin vibrates. This makes the air particles closest to the drum start to vibrate as well.



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.

As a scientist, the essential knowledge I need to answer the big question is:	Date
When an instrument is played, the air around or inside it vibrates. These vibrations travel as a sound wave. Sound waves travel through a medium, such as air or water, to the ear.	
Pitch is how high or low a sound is. Parts of an instrument that are shorter, tighter or thinner produce high-pitched sounds. Parts of an instrument that are longer, looser or fatter produce low-pitched sounds.	
Volume is how loud or quiet a sound is. The harder an instrument is hit, plucked or blown, the stronger the vibrations and the louder the sound.	
Sounds are louder closer to the sound source and fainter as the distance from the sound source increases.	